An Empirical Analysis of Islamic Microfinance Institutions' Performance in Indonesia

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Abstract of a thesis submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy in Finance

Abstract

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This study investigates the impact of Islamic microfinance institutions on rural household welfare in Indonesia. In particular, this study focuses on estimating the impact of financing, the level of *shari'a* compliance, the best financing mechanism, and the factors that impact on rural households that become clients of Islamic microfinance institutions. Islamic microfinance institutions play an important role in Indonesia because the country has the world's largest Muslim population. Hence, the availability of financial products and services that parallel Muslim beliefs is crucial. This study estimates the impact of Islamic financing on rural household welfare using the difference-in-difference method followed by the adjusted difference-in-difference method. Next, the study evaluates *shari'a* compliance and the Islamic values of clients of Islamic microfinance institutions. The double difference-in-difference and adjusted difference-in-difference methods are adopted to investigate the financing impact of two Islamic microfinance institutions' financing mechanisms; profit and loss sharing and non-profit and loss sharing. The logit model is used to identify factors that influence rural households to become clients of Islamic microfinance institutions.

This study produces several important findings. The difference-in-difference method results show Islamic microfinance institutions' financing helps to increase the clients' annual income. The fixed effects results confirmed that Islamic microfinance institutions' financing improved clients' income compared with non-clients. The evaluation of *shari'a* compliance found that Islamic microfinance institutions' financing parallels the *shari'a* standards of the National *Shari'a* Board of Indonesia. The results of the double difference-in-difference method confirm that the profit and loss sharing mechanism has a greater impact on rural household welfare than the non-profit and loss sharing mechanism. Finally, age, gender, and income are factors that significantly influence rural households to become clients of Islamic microfinance institutions.

Keywords: Islamic microfinance institution, difference-in-difference, *shari'a* compliance, profit and loss sharing mechanism.

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Abbreviations

AAOIFI	Accounting and Auditing Organization for Islamic Financial Institutions
ATT	Average Treatment Effect on the Treated
BI	Bank Indonesia/ Central Bank of Indonesia
BMT	*Baitul Maal Wat Tamwil*
BPR	Bank Perkreditan Rakyat/ Rural Bank of Indonesia
BRI	Bank Rakyat Indonesia
BQ	*Baitul Qirad*
BTM	*Baitul Tamwil Muhammadiyah*
DID	Difference-in-Difference
DSN	Dewan Syariah Nasional/ National *Shari'a* Board
IDR	Indonesian Rupiah
IFI	Islamic Financial Institution
KJKS	Koperasi Jasa Keuangan Syariah/ Islamic Financial Services Cooperatives
MFI	Microfinance institution
MoCMSMEs	Ministry of Cooperatives and Micro and Small, and Medium Enterprise
MUI	Majelis Ulama Indonesia/ Council of the Indonesian Ulema
OIC	Organisation of Islamic Cooperation
OJK	Otoritas Jasa Keuangan/ Indonesia Financial Services Authority
PLS	Profit and Loss Sharing
ROSCA	Rotating Savings and Credit Association
SHG	Self-Help Group
SME	Small and Medium Enterprise
SSB	*Shari'a* Supervisory Board
PINBUK	Pusat Inkubasi Bisnis dan Usaha Kecil/ Centre for Micro Enterprise Incubation
UJKS	Unit Jasa Keuangan Syariah/ Islamic Financial Services Unit

Chapter 1

Introduction

1.1 Introduction

Microfinance institutions (MFIs) are financial institutions that play an important role in providing financial access for the poor people in rural areas and help to reduce poverty. Vatta (2003) claims that MFIs can reach the rural poor to address the basic problems of rural development in which formal financial institutions (such as banks) have not been able to make significant advances. Providing financial services and helping people who have difficulty in meeting loan contract requirements (e.g., the legality of the business and collateral) are predominant features of MFIs compared with other financial institutions such as commercial banks. Formal financial service institutions generally demand specific requirements such as collateral, land and wealth, before granting credit (Hadi, Wahyudin, Ardiwinata, & Abdu, 2015; Li, Gan, & Hu, 2011a). These requirements are major obstacles for the rural poor in obtaining finance to support their activities. Access to finance is important and has tremendous economic and social impacts, especially on the rural poor. The impacts are not only economic, access to finance also contributes to better education, health and housing for the poor (Hermes & Lensink, 2011).

1.1.1 Islamic MFIs and the Muslim economy

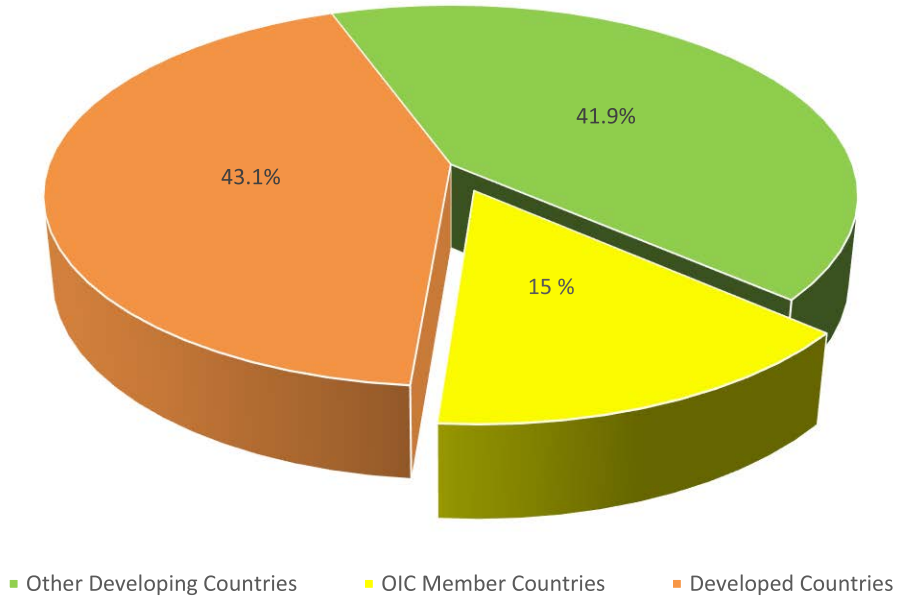
In 2010, Muslims accounted for 1.6 billion people in the world and this number is expected to grow to about 2.8 billion people by 2050, equal to 23.2% and 29.7%, respectively, of the world's population. The countries with the largest Muslim population are dominated by countries from the Asian region such as Indonesia, India and Pakistan (Pew Research Center, 2015).

Table 1.1 The world's top 10 countries with the largest Muslim population in 2010.

No	Country	Share of the world's Muslim population (percentage)	Share of Muslims within the country (percentage)	Muslim population (millions)
1	Indonesia	13.1	87.2	209
2	India	11.0	14.4	176
3	Pakistan	10.5	96.4	167
4	Bangladesh	8.4	90.4	134
5	Nigeria	4.8	48.8	77
6	Egypt	4.8	94.9	76
7	Iran	4.6	99.5	73
8	Turkey	4.5	98.0	71
9	Algeria	2.2	97.9	34
10	Morocco	2.0	99.9	31

Source: Pew Research Center (2015).

Table 1.1 shows the top 10 countries with the largest Muslim populations in the world in 2010. Indonesia had 209 million Muslims or 13.1% of the world's Muslim population. As the largest Muslim majority country, about 87.2% of Indonesia's population is Muslim. India had the second most Muslims (176 million) followed by Pakistan (167 million) and Bangladesh (134 million). Nigeria, Egypt, Iran and Turkey had over 70 million Muslims, followed by Algeria and Morocco with over 30 million Muslims (Pew Research Center, 2015). However, despite Muslims commanding over 23% of the world's population, they produced only about 15% of the world's total GDP in 2014 (see Figure 1.1).



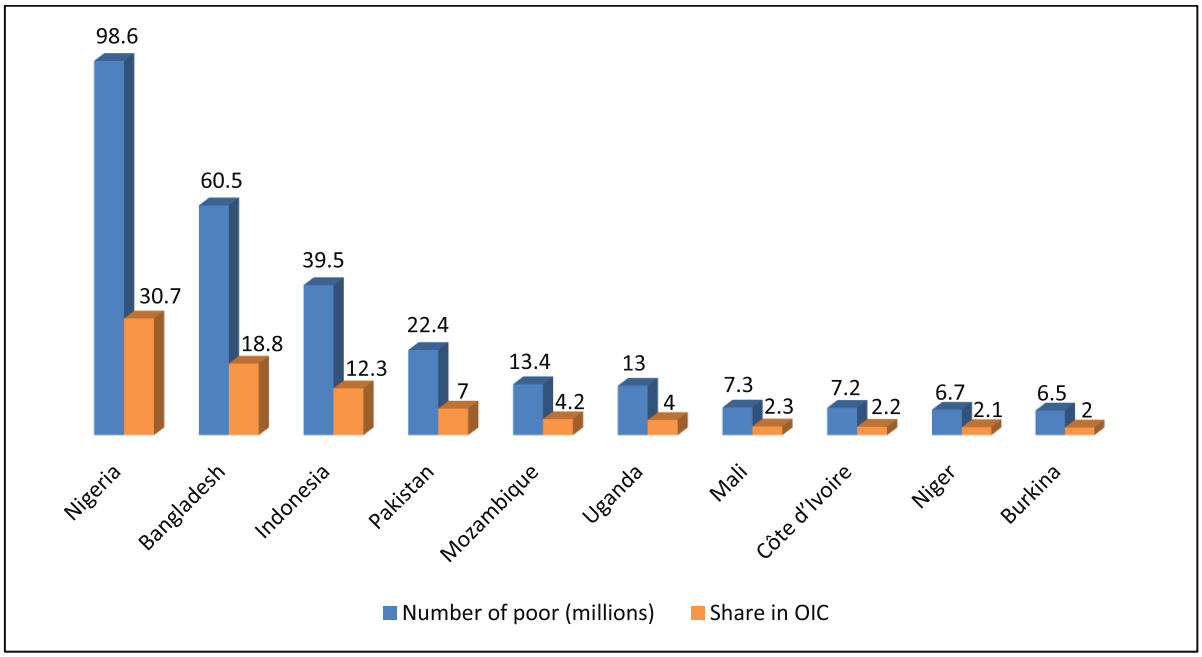
Source: Adapted from the Organisation of Islamic Cooperation (2015).

Figure 1.1 Total world GDP in 2014.

Figure 1.1 shows the contribution of the Organisation of Islamic Cooperation (OIC) member countries towards total world GDP. The figure also compares the contribution of OIC countries with developed countries and other developing countries. The share of developed countries' GDP of the world's GDP is 43.1%, other developing countries contribute 41.9% and OIC member countries contribute only 15% (Organisation of Islamic Cooperation, 2015). The OIC consists of 57 countries, spread over four continents and is the second largest inter-governmental organization. The objective of the OIC is to "safeguard and protect the interest of the Muslims in the spirit of promoting international peace and harmony among various people of the world" (Organisation of Islamic Cooperation, 2017).

Poverty is a major problem in the countries with a Muslim majority. Based on data from SESRIC (2015), in 2011, about 33.1% of the world's total poor lived in the OIC countries. Moreover, around 86% of the poor in OIC countries were spread over only 10 OIC member countries. The top 10 OIC countries with the greatest number of poor people are: (1) Nigeria; (2) Bangladesh; (3) Indonesia; (4)

Pakistan; (5) Mozambique; (6) Uganda; (7) Mali; (8) Côte d'Ivoire; (9) Niger; and (10) Burkina (SESRIC, 2015).



Source: Adapted from SESRIC (2015).

Figure 1.2 The top 10 OIC countries with the highest number of poor and their percentage share in 2011.

Figure 1.2 shows the top 10 OIC member countries with the greatest number of poor people and their percentage share of the OIC's total population. Seven of the 10 countries are from Sub-Saharan Africa. Nigeria has 98.6 million poor contributing about one third (30.7%) of the OIC's total poor. In this figure Bangladesh is the second with 18.8% (60.5 million), followed by Indonesia with 12.3% (39.5 million), Pakistan with 7% (22.4 million), Mozambique with 4.2% (13.4 million), Uganda with 4% (13 million), Mali with 2.3% (7.3 million), Côte d'Ivoire with 2.2% (7.2 million), Niger with 2.1% (6.7 million), and Burkina with 2% (6.5 million) (SESRIC, 2015). In addition, according to SESRIC (2015), enrolment rates (NER) for primary and secondary schools in OIC countries are low. In OIC countries in 2011, primary and secondary enrolment rates were 74% and 50%, respectively; while the world rates were 84% and 55% in that order.

One reason for the large number of poor and low enrolment rates in Muslim majority countries is the lack of access to microcredit. A study by SESRIC (2015) recommended promoting the agricultural sector in OIC countries through giving financial access to farmers. Special programmes to support self-employment through microcredit should be initiated and established. Moreover, the role of

Islamic social instruments such as *waqf*[1] and *zakah*[2] should be increased and promoted. With regard to financial access for Muslims, microcredit that parallels Muslim beliefs is important, especially because Muslims are restricted from participating in current conventional financial institutions because they use interest (*riba*) (Akhter, Akhtar, & Jaffri, 2009; Karim, Tarazi, & Reille, 2008).

Islamic MFIs are financial institutions that include particular Islamic values and could be a solution for poor people who are averse to borrowing, in part, because of their religious beliefs (Ahmad & Ahmad, 2009). The principles of Islamic MFIs are derived from Islamic law (*shari'a*) (Seibel & Dwi Agung, 2006). Islamic law governs financial schemes without charging interest (*riba*) (Rahman, 2010a). Islamic MFIs provide products that differ from conventional MFIs such as profit and loss sharing (PLS) products and non-profit and loss sharing (non-PLS) products (Dhumale & Sapcanin, 1999). In the upcoming paragraph, an exhaustive explanation of the Islamic business principles or Islamic law (*shari'a*) that govern Islamic MFI will be presented.

1.1.2 Islamic MFIs and Indonesia

Indonesia is an agricultural country with the world's largest Muslim population. Islamic MFIs can play a significant role in addressing poverty alleviation in the rural sector predominantly dominated by agricultural activities. The principles attached to Islamic MFIs, i.e., avoiding the use of interest/*riba* are an advantage for such institutions to present to people in an Islamic majority country like Indonesia. Furthermore, Islamic MFIs operate cooperatively with a PLS mechanism that can be widely and easily adapted to rural poor households in Indonesia. Institutions that have *shari'a* compliant financial products can cater to the needs of traditional farmers in rural households. Islamic MFIs also have charity-based funds that allow them to raise Islamic charity funds such as *zakah* and *sadaqat*[3] (Kaleem & Ahmed, 2009).

There are two types of formal Islamic MFIs registered in Indonesia under the supervision of the Ministry of Cooperatives and Micro and Small, and Medium Enterprise of the Republic of Indonesia (MoCMSMEs): Islamic Financial Services Cooperatives (KJKS) and Islamic Financial Services Units (UJKS). The KJKS are fully cooperative institutions that provide finance, investment and savings under Islamic business principles, whereas UJKS are business units under the management of cooperatives that provide finance, investment and savings following Islamic principles (Sugianto, 2012). In April

[1] The *waqf* is created when somebody gives away an asset for the benefit of the society. There is also the concept of cash *waqf* that can be used in order to benefit the society (Ahmed, 2007).
[2] Compulsory charity for Muslims (if their wealth exceeds the condition (nisab), equal to 85 grams of gold and they have held it for a year (Haul)).
[3] Optional charity.

2012, there were approximately 4,117 KJKS and UJKS under the supervision of the MoCMSMEs of the Republic of Indonesia (Sugianto, 2012).

Table 1.2 shows the outreach of Islamic MFIs in some selected countries. Lebanon has one Islamic MFI with 26,000 clients; Bangladesh with Islami Bank Bangladesh Limited (IBBL) and Social Investment Bank Ltd has 111,837 clients; Jordan has 1,481 clients; Saudi Arabia has 7,000 clients, whereas Sudan with three Islamic MFIs has 9,561 clients. The Syrian village bank institution has 2,298 clients, the Pakistan and Afghanistan institutions have 6,069 and 53,011 clients, respectively, and Indonesia covers 762,000 clients with cooperative institutions (Karim et al., 2008; Nasdaq OMX, 2012; Sugianto, 2012).

Table 1.2 Outreach of Islamic MFIs by country.

Year	Country	No of Institutions	No of Clients
2007 [a]	Lebanon	1	26,000
2007 [a]	Bangladesh	2	111,837
2007 [a]	Jordan	1	1,481
2007 [a]	Saudi Arabia	1	7,000
2007 [a]	Sudan	3	9,561
2007[a]	Syria	1	2,298
2007[a]	Pakistan	1	6,069
2007[a]	Afghanistan	4	53,011
2012[b]	Indonesia	4,117	762,000

[a]Year 2007, survey conducted by CGAP as cited in Nasdaq OMX (2012);
[b]Year 2012, Sugianto (2012).

Another country that offers Islamic microfinance products is Malaysia. Some products from Malaysian MFIs are *shari'a* compliant. For instance, Bank Rakyat provided the concept of *rahn* (pawning) whereas Amanah Ikhtiar Malaysia (AIM) offers *qardh hasan* (benevolent loan) as its microfinance product (Nasdaq OMX, 2012). In terms of *shari'a* compliance, financing by AIM meets the *shari'a* standard except that they charge 10% for operational costs and management fees with 2% as compulsory savings. Another example is Yayasan Usaha Maju (YUM), which has interest-free loans based on Islamic principles, but it has a 10-18% charge for managerial and operational fees with 2% compulsory savings (Al-Shami, Majid, Rashid, & Hamid, 2013).

1.2 Research problems and questions

1.2.1 Research problems

Indonesia has the world's largest Muslim population that faces severe poverty problems. In 2014, over 28 million Indonesians were living below the poverty line, i.e., 11.3% of the population. The national poverty line in Indonesia is 292,951 rupiahs, equivalent to US$ 24.40 per month (The World Bank, 2015a). According to the Indonesian central agency on statistics, cited in the Ministry of

Religious Affairs of the Republic of Indonesia (2013), Muslims comprise 87.21% of the Indonesian population. This equals 207 million of the 237 million Indonesian population. The gross national income (GNI) per capita in 2014 was US$ 3,650 and gross domestic product (GDP) growth was 5% (The World Bank, 2015b).

Islamic MFIs can play a significant role in addressing poverty alleviation in the Indonesian rural sector. This is because most conventional financial institutions, particularly commercial banks' and MFIs' services and products, do not fulfil the religious needs of Muslim clients. Many Muslims prefer products from Islamic MFIs rather than conventional MFIs because conventional MFI products contravene their religious beliefs (Akhter et al., 2009).

Islamic MFIs operate cooperatively on a PLS mechanism that can be widely and easily adapted to rural poor households in Indonesia. The institutions have financial products that cater to the needs of traditional Muslim farmers and rural households. PLS products promote partnership, equity financing and risk sharing, which can benefit farmers and rural households. Islamic MFIs and rural households share the results based on the real condition of the project. Since Islamic MFIs implement this mechanism, both share the profits and risks of the project. In conventional finance, the institution gets a predetermined return and the risk is borne by the farmers or rural households (Farooq, 2007).

According to Chowdhry (2006), Islamic finance provides a good mechanism to empower the poor and can convert the potential capital into profit under the PLS mechanism. In addition, Karim et al. (2008) reported that 72% of Muslims living in Muslim-majority countries do not want to use conventional financial institutions. This is because conventional financial institutions go against their religious beliefs. Therefore, Islamic MFIs have a great opportunity to cover the needs of Muslims estimated at over 1.2 billion people globally (Akhter et al., 2009). The United Kingdom (UK) government also wishes to benefit from this opportunity through open access for financial services that are consistent with Muslim beliefs and declared Britain as the hub of Islamic finance in Europe. In 2007, the Bank of England and the Financial Service Authority (FSA) monitored the development of Islamic finance in the UK and published a paper on the regulatory perspective of Islamic finance in the UK (Ainley, Mashayekhi, Hicks, Rahman, & Ravalia, 2007a).

In the Islamic finance concept, the term "client" is used instead of "borrower" because various schemes are used in the Islamic finance concept, such as trading, profit and loss sharing or services. The term "borrower" is used only in *qard* and *qard al-hasanah* schemes because these are the only loans allowed in Islamic finance. Islamic MFIs target the poor and use Islamic finance schemes such as cost plus mark-up (*murabaha*), profit sharing (*mudarabah*) and profit and loss sharing (*musharakah*) in their contracts (Dhumale & Sapcanin, 1999).

Furthermore, Islamic MFIs can combine their products with Islamic charity-based funds (*zakah*, and *sadaqat*), which can target the poorest and help free them from poverty (Ahmad, 2002). The combination of Islamic MFIs and Islamic charity based funds are great tools to help the poorest especially in Muslim majority countries. This is because *zakah,* for instance, is mandatory for every wealthy Muslim (Ahmad, 2002). Since *zakah* also gives to the poor[4] people and Islamic MFIs can collect *zakah* funds, the poorest clients can spend these funds for their consumption while financing by Islamic MFIs can help them in productive activity.

Islamic MFIs were introduced into Indonesia in 1990. Despite the fact that they lacked regulation, supervision and reliable reporting, they have become an alternative financing source for poor Muslims in rural areas because they have products parallel with Muslim beliefs (Seibel, 2008). Islamic MFIs such as KJKS BMT MMU Sidogiri in East Java, Indonesia, are an example of alternative sources of funds for people in rural areas. These Islamic MFIs already distribute finance to 17,372 clients; about 70% of them (12,160 households) are poor clients in rural areas.

However, there are limited empirical studies focusing on the impact of Islamic MFIs in reducing poverty, particularly in rural areas in Indonesia. Seibel and Dwi Agung (2006) and Seibel (2008) studies addressed the history, development, problems and challenges of Islamic MFIs in Indonesia; however, the studies do not provide empirical data on the impact of Islamic MFIs. The empirical study by Adnan and Ajija (2015) investigated the impact of financing from one Islamic MFI in East Java, Indonesia. Using a paired *t*-test and poverty index, the study showed financing by Islamic MFIs can help to increase the client's income and empower the client's business productivity. Hence, the study concluded that financing from Islamic MFIs is effective in reducing poverty in Indonesia.

The purpose of this study is to assess the impact of Islamic MFIs' financing on rural household welfare in Indonesia. There are two financing mechanisms in Indonesian Islamic MFIs: PLS and non-PLS. This study also identifies which financing model provides a greater impact on rural households in Indonesia. There is no comprehensive study in Indonesia that measures the impact of Islamic MFIs, particularly the impact of the two financing mechanisms.

This study also examines *shari'a* compliance by the Islamic MFI schemes based on the guidance and standards from Indonesia's *shari'a* board. Maintaining *shari'a* compliance is important for Islamic financial institutions because it means the products and services from the institutions parallel Muslim

[4] Based on verses in the holy *Qur'an*, there are eight groups that are eligible for *zakah*: *fuqara* (poor); *masakeen* (needy); *ameleen-a-alaiha* (those who are in charge thereof); *muallafat-ul-quloob* (those whose hearts are to be won over); *fir-riqaab* (the freeing of human beings from bondage); *al-gharimun* (those who are overburdened with debts); *fi-sabeelillah* (for every struggle) in Allah's cause; and *ibn as-sabil* (for the wayfarer) (9:60) (Obaidullah, 2008).

beliefs based on Islam principles. The study will further investigate the factors that influence rural households to become clients and receive finance from Islamic MFIs.

This study focuses on formal Islamic MFIs in Indonesia. As stated above, there are two types of formal Islamic MFIs under the supervision of the MoCMSMEs of the Republic of Indonesia: KJKS and UJKS. However, some of these Islamic MFIs are not governed and supervised by the financial authorities in Indonesia[5]. Formal Islamic MFIs such as KJKS and UJKS are subject to regulation and supervision because they have to register with the government through MoCMSMEs and they are under the law of cooperation in Indonesia.

Indonesia has a wide range of MFIs and their concept in Indonesia is also ambiguous (Seibel & Dwi Agung, 2006). Based on financial authorities and international recognition, formal financial institutions that offer microfinance services include units of the Bank Rakyat Indonesia (BRI) Micro-banking Division and the rural banks (BPR). Cooperatives and so-called village banks (bank desa) are under the semiformal financial sector and are not supervised by financial authorities. There are also informal microfinance-like channelling groups and rotating savings and credit associations (ROSCAs, arisan), and self-help groups (Seibel & Dwi Agung, 2006).

However, based on the Indonesia Financial Services Authority (2015b), MFIs in Indonesia are classified under non-bank regulations. The government puts MFIs under this classification because there are many non-bank financial institutions operating in Indonesia. These do not include formal financial institutions that offer microfinance services such as BRI and rural banks (BPR). Some cooperatives, such as KJKS and UJKS, are under the supervision of the MoCMSMEs of the Republic of Indonesia (semi-formal), whereas others such as *Baitul Maal Wat Tamwil* (BMT) and *Baitul Tamwil Muhammadiyah* (BTM) are only registered under the Centre for Micro Enterprise Incubation (PINBUK) or associated with Induk Koperasi Syariah BMT (Inkopsyah BMT) (Adnan & Ajija, 2015; Indonesia Financial Services Authority, 2015b; Seibel & Dwi Agung, 2006).

Table 1.3 MFIs in Indonesia in December 2014.

Type of MFI	No of units	Act	Total assets (billion IDR)	No of clients (thousands)	Type	Supervised by
BRI micro-banking division (Teras BRI, Teras BRI (mobile office))	8,360	Law No. 10/ 1998	778,020	7,300	Conventional	OJK

[5] Indonesia Financial Services Authority (OJK) is a financial authority in Indonesia that promotes and organizes a system of regulations and supervises financial services sector activities (Indonesia Financial Services Authority, 2013).

Bank Perkreditan Rakyat (BPR) rural banks	4,895	Law No. 10/ 1998	89,000	13,476	Conventional	OJK
Bank Pembiayaan Rakyat Syariah (BPRS) Islamic rural banks	439	Law No. 10/ 1998	13,003	1,249	Islamic	OJK
Pawnshop	850 [a]	Law No. 178/ 1961	32,240 [b]	N/A	Conventional/ Islamic	OJK
Koperasi Simpan Pinjam (KSP)/Unit Simpan Pinjam (USP) savings and loan cooperatives	38,083 [c]	Law No. 25/ 1992 Law No. 17/ 2012	8,900 [c]	16,871 [c]	Conventional	MoCMSMEs
KJKS/UJKS Islamic financial services cooperatives	4,117 [d]	Law No. 25/ 1992 Kepmen No. 91/2004	5,000	762 [d]	Islamic	MoCMSMEs

Sources: Gallardo (2001); Indonesia Financial Services Authority (2014a): Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia (2005); Bank Rakyat Indonesia (2015a); Central Bank of Indonesia (2015); Sugianto (2012).
[a]Year 2004; [b]September 2014; [c]Year 2005; [d]Year 2012.

Table 1.3 presents some data about MFIs in Indonesia. Bank Rakyat Indonesia (BRI) is a state-owned bank concerned with micro-financing; it started business in 1895. Around 31.25% of its lending is for micro and small and medium enterprises (SMEs) through its micro-banking division. In December 2014, BRI's total assets were over 778 trillion rupiahs; there were over 8,000 units in the micro-banking division with over 7 million clients. Bank Perkreditan Rakyat (BPR), Indonesia's rural bank, is a private/local government institution that, since 1988, has also focused its banking business on rural areas in Indonesia. In December 2014, there were 1,643 BPRs with 4,895 offices in Indonesia. Total assets were 89 trillion rupiahs and the bank served over 13 million clients. Both of these institutions (BRI and BPR) are supervised by Otoritas Jasa Keuangan Indonesia (OJK)/ Indonesia Financial Services Authority (Bank Rakyat Indonesia, 2015a; Central Bank of Indonesia, 2015; Gallardo, 2001; Indonesia Financial Services Authority, 2014a; PT BPR Indra Chandra, 2011).

Bank Pembiayaan Rakyat Syariah (BPRS), the Islamic rural bank, was first introduced to Indonesia in 1990 and focused on rural areas and micro-financing but with Islamic principles (*shari'a* compliant products). In December 2014, BPRS's total assets were over 13 trillion rupiahs and there were 163 BPRSs with 439 offices that covered over 1.2 million clients. Pawnshop is a state-owned institution in Indonesia that started business in Indonesia in 1746. In September 2014, its total assets were over 34 trillion rupiahs. There were 850 pawnshop offices in 2004. BPRSs and pawnshops are supervised by

OJK (Central Bank of Indonesia, 2015; Gallardo, 2001; Icanenede, 2010; Indonesia Financial Services Authority, 2014a; Pegadaian Indonesia, 2014).

Koperasi Simpan Pinjam (KSP) and Unit Simpan Pinjam (USP) savings and loan cooperatives and savings and loan units are Indonesia's cooperative institutions that are owned by members. The idea of cooperatives in Indonesia was first introduced in 1896 and, in December 2014, the total assets of KSP/USP were over 8 trillion rupiahs; they served over 16 million clients. Koperasi Jasa Keuangan Syariah (KJKS) and Unit Jasa Keuangan Syariah (UJKS) are cooperatives with Islamic principles in their business. In 2012, there were over 4,000 KJKSs and UJKSs and 700,000 clients in Indonesia. These cooperatives are regulated and supervised by the MoCMSMEs of the Republic of Indonesia (Gallardo, 2001; Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia, 2005, 2015; Sugianto, 2012).

1.2.2 Research questions

This study addresses the following research questions:

1. How does financing by Islamic MFIs impact rural household welfare in Indonesia?
2. Is Islamic MFIs financing compatible with the *shari'a* standards and do Islamic MFIs' clients have to exhibit good Islamic values?
3. What is the impact of the PLS and non-PLS financing mechanisms in Islamic MFIs? Which is the better financing mechanism in terms of impact on rural household welfare in Indonesia?
4. What factors influence rural households to become clients and receive finance from Islamic MFIs in Indonesia?

1.3 Research objectives

This study aims to comprehensively investigate Islamic MFIs' financing of rural households in Indonesia. To achieve this objective, the study will:

1. Evaluate the impact of Islamic MFIs' financing on rural household welfare in Indonesia.
2. Examine *shari'a* compliance and evaluate the Islamic values of Islamic MFIs' clients. This examination is based on the standards set by Indonesia's *shari'a* board.
3. Assess the impact of PLS and non-PLS financing mechanisms on Islamic MFIs and identify which financing mechanism better impacts on rural household welfare in Indonesia.
4. Identify the factors that determine how rural households become clients of and receive finance from Islamic MFIs in Indonesia.

1.4 Contributions of the research

There is limited literature on Islamic MFIs and only a few focus on financing activities and their impact on the society. For instance, Akhter et al. (2009) study investigated the operation of Akhuwat, Islamic MFIs in Pakistan and their impact on poverty alleviation in society. Other empirical studies measuring the impact of Islamic MFIs on poverty alleviation, such as that of Rahman and Ahmad (2010), focused on the impact of rural development schemes (RDS) on poverty alleviation in Bangladesh. The RDS (*shari'a* based microfinance) is under the Islamic Bank Bangladesh Limited (IBBL).

However, in contrast there is ample literature on conventional MFIs. For instance Li, Gan, and Hu (2011b) tried to explain the welfare impact of conventional microcredit on rural households in China; Kondo, Orbeta, Dingcong, and Infantado (2008) assessed the impact of conventional MFIs on rural households in the Philippines. Hiatt and Woodworth (2006) measured the impact of village banks on indigenous families in central America and Imai, Arun, and Annim (2010) evaluated the impact of MFIs on poverty alleviation using national household data in India.

There is limited empirical literature that has investigated the impact of the PLS and non-PLS financing mechanisms of Islamic MFIs, particularly the impact on rural household welfare in Indonesia. According to Dusuki and Abdullah (2006), the ideal mechanism adopted by Islamic financial institutions, including Islamic MFIs, is PLS. A PLS mechanism with an equity-based and risk-sharing contract represents the true spirit of Islamic finance more than the debt-based mechanism in non-PLS contracts.

However, based on studies by Aggarwal and Yousef (2000), Dusuki and Abdullah (2006) and Asutay (2007), the more popular financing mechanism in Islamic financial institutions, including Islamic MFIs, is still the non-PLS financing mechanism, especially for debt-like schemes such as *murabaha* and

ijarah wa iqtina'. These schemes are popular because they are simple and convenient for the institution. A non-PLS mechanism is also relatively less risky than a PLS. This is because, in the PLS mechanism, the rate of return to the banks' investment is greater than with the non PLS mechanism; this is a consequence of the risk-sharing mechanism (Dusuki & Abdullah, 2006).

1.5 Structure of the thesis

The rest of this thesis is organised as follows. Chapter 2 provides an overview of microfinance in Indonesia. Chapter 3 reviews the relevant literature on the financing/lending impacts of microfinance, *shari'a* standards and Islamic values, the two financing mechanisms in Islamic MFIs (PLS and non-PLS) and the factors that determine whether rural households become Islamic MFIs' clients. Chapter 4 describes the research methodology, data collection, empirical models and estimation techniques and Chapter 5 reports the empirical results. Chapter 6 concludes with a summary of the major research findings, policy implications, followed by the limitations of the research and recommendations for future research.

Chapter 2

An Overview of Microfinance in Indonesia

This chapter provides an overview of microfinance in Indonesia and includes the history, regulations and types of institution. The chapter is organised as follows: Section 2.1 provides an overview of microfinance institutions (MFIs) in Indonesia, including formal, semi-formal and informal MFIs. Section 2.2 discusses the development of Islamic finance in Indonesia. Several forms of Islamic financial institutions in Indonesia are discussed in Section 2.3. Section 2.4 discusses Islamic MFIs in Indonesia and finally, Section 2.5 summarises the chapter.

2.1 MFIs in Indonesia

Microfinance, in general, is a tool that can create financial inclusion for the poor, improve household welfare and reduce poverty (Berhane & Gardebroek, 2011; Li et al., 2011b; Littlefield, Morduch, & Hashemi, 2003; Widiarto & Emrouznejad, 2015). MFIs, both Islamic and conventional, are institutions that provide financial access for everyone because their main objective is to minimize financial exclusion (Lapenu & Pierret, 2006). MFIs originate in many forms such as projects, non-profit organizations (NGOs), cooperatives and private institutions. MFIs' key stakeholders include employees, members/clients, founders, government, donors, banks, institutional investors, and private individuals (Lapenu & Pierret, 2006).

An MFI is a flexible institution that can easily adjust to the needs of local people, especially the poor. For instance, group micro-lending proved to be an effective way to reach the rural poor in Asia, compared with individual lending in Brazil or Egypt (Ahmad & Ahmad, 2009). There are many types of microfinance institutions such as non-governmental organizations (NGOs), rural banks, village banks, and cooperatives (Karim et al., 2008). There are also MFIs that include religious values in their operations such as Islamic MFIs.

Table 2.1 Forms of MFIs.

Type of MFI	Ownership	Fund Source	Example
Project	Private investors	Donors	Institutions are not formalized (development projects) e.g., Morocco and Russian microfinance development projects by The World Bank
Non-profit organization/ foundation	Private trustees	Grants, donations	The Sanduk in Comoros; Opportunity International in Australia

Cooperative	Members	Equity capital, deposits, commercial funds	FACECAM in Benin, BMT MMU Sidogiri in Indonesia
Private company	Private capital, public capital	Equity capital, deposits, commercial funds	RDS Islami Bank Bangladesh Limited (IBBL) in Bangladesh, Grameen Bank in Bangladesh
Public Entity	Central government, local government, company with public shareholders	Government, public	Cajas in Municipales Peru, Bank Rakyat Indonesia (BRI) in Indonesia

Sources: Lapenu and Pierret (2006); Gallardo (2001); Adnan and Ajija (2015); Rahman and Ahmad (2010); Grameen Bank (2015); Opportunity International (2015); Mukherjee (1997); The World Bank (2013).

Table 2.1 presents most of the available existing forms of MFIs around the globe. A Project is a form of MFI that is mostly funded by donors. At its creation, there is no specific form or formalized structure, therefore it is often called a development project. Non-profit organizations (NGOs) are another form of MFI that mostly lack a legal framework. They cannot accept savings but, in certain cases, they can offer a savings product. A cooperative is another form of MFI where the ownership belongs to its members. It has savings and credit services for members (Lapenu & Pierret, 2006).

A private company is a form of an MFI that consists of private and public capital. Private capital can be local (such as local banks, clients, and employees) and international (such as commercial banks, social investment funds, private commercial funds, etc.) A private company can also be structured with public capital from local or national government. A public entity is owned by the government or state and can be a shareholder company with shares owned by the public. This form of MFI is governed by special laws or banking laws (Lapenu & Pierret, 2006). The sustainability and effectiveness of an MFI not only depends on its form, but also depends on the culture of the country. Some types of MFI need special support to succeed, such as cooperatives or transformed NGOs (Seibel, 2005b). For instance, to solve an issue about the effectiveness of members' control in cooperatives, this type of MFI needs special support in the form of effective regulation and supervision from an authorized party (Seibel, 2005b).

Indonesian microfinance has a long history and started in the late 19th century, initially with banks in rural areas. On December 16, 1895, R. Bei Aria Wiraatmadja established the *Hulp-en Spaar Bank der Indlandsche Bestuurs Ambtenaren* or Bank for Civil Servants in Purwokerto, Central Java, Indonesia. This rural bank is known as Bank Rakyat Indonesia (BRI) (Bank Rakyat Indonesia, 2015b; Shodiq, 2014).

Table 2.2 Indonesia's conventional financial institutions in 2014.

Types	Total Institutions	Total Offices Network
Commercial Banks	119	19,948
Rural Banks	1,643	4,895
Cooperatives	38,083*	NA

Sources: Indonesia Financial Services Authority (2014a); Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia (2005).
*2005.

Table 2.3 Indonesia's Islamic financial institutions in 2014.

Types	Total Institutions	Total Offices Network
Islamic Commercial Banks	12	2,151
Conventional Banks with Islamic Business Units	22	320
Islamic Rural Banks	163	439
Islamic Cooperatives	4,117*	NA

Sources: Indonesia Financial Services Authority (2014a); Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia (2005); Sugianto (2012).
*2012.

Indonesia has the most differentiated microfinance and banking sector of any developing country in the world (Seibel & Dwi Agung, 2006). In December 2014, there were 119 commercial banks with 19,948 offices and 1,643 rural banks with 4,895 offices (see Table 2.2). Based on data from The Ministry of Cooperatives and Micro and SMEs of the Republic of Indonesia (MoCMSMEs), there were 38,083 formal savings and loan cooperatives under its supervision in 2005 (Indonesia Financial Services Authority, 2014a; Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia, 2005).

Besides conventional financial institutions, Indonesia also has institutions that adopt Islamic principles in their operations. Islamic principles imply "guidance" derived from the Muslim holy book (The *Qur'an*) and the way of life of the prophet Muhammad, peace be upon him. All Muslim activities, including economic activity, should follow these two pillars (Ahmad & Hassan, 2007). In 2014, Islamic financial institutions in Indonesia comprised 12 Islamic commercial banks with 2,151 offices; 163 Islamic rural banks with 439 offices (see Table 2.3) and based on 2012 data, there were 4,117 formal Islamic financial cooperatives under the supervision of MoCMSMEs (Indonesia Financial Services Authority, 2014a; Sugianto, 2012).

There are three categories of MFIs in Indonesia: formal, semi-formal, and informal. Based on the financial authorities and international recognition, formal financial institutions that offer microfinance services include units of the Bank Rakyat Indonesia (BRI) Micro-banking Division. MFIs not supervised by financial services authorities are categorized as semiformal institutions while

microfinance-like channelling groups and rotating savings and credit associations are under the informal category (Seibel & Dwi Agung, 2006). The following sections explain each of these categories of MFIs.

2.1.1 Formal MFIs in Indonesia

Formal MFIs are institutions supervised by financial authorities (e.g., Indonesia Financial Services Authority (OJK)). According to Seibel and Dwi Agung (2006), formal MFIs in Indonesia include units of the Bank Rakyat Indonesia (BRI) Micro-banking Division and the rural bank (BPR).

(1) Bank Rakyat Indonesia (BRI)

BRI, which started operations in 1895, is a state-owned bank involved in micro lending. It has a large number of customers with 50 million deposit accounts in 2014. Approximately 31.25% of its lending caters for micro, small and medium enterprises (SMEs) through its micro-banking division. As of December 2014, BRI's total assets were over 800 trillion rupiahs; there were over 8,000 offices in the micro-banking division that served over 7 million micro-clients (Bank Rakyat Indonesia, 2014, 2015a; Gallardo, 2001; Indonesia Financial Services Authority, 2014a).

Table 2.4 History of Bank Rakyat Indonesia.

Year	Milestones	Description
1895	Company founded under the name of De Poerwokertosche Hulp en Spaarbank der Inlandsche Hoofden	• Initially it was an institution that managed mosque funds and distributed them to society • In 1912 it changed its name to *Centrale Kas Voor Volksscredietwezen* • Under Japanese colonisation, the name was changed to *Syomin Ginko* (1942-1945)
1946	Nationalised by the Indonesian government and changed its name to Bank Rakyat Indonesia (BRI)	• The government of Indonesia changed the bank's name from *Syomin Ginko* to Bank Rakyat Indonesia through the government regulation no. 1/1946 • The main objective of Bank Rakyat Indonesia at that time was to support Indonesia's development
1960	The Indonesian government changed its name to Bank Koperasi Tani Nelayan (BKTN)	NA
1968	The Indonesian government changed its name back to Bank Rakyat Indonesia (BRI)	• Based on regulation no. 21/1968, the bank's name was changed back to Bank Rakyat Indonesia (BRI) • The government of Indonesia designated BRI as a state commercial bank
1969	The Indonesian government appointed BRI to distribute credit to Indonesian society through "Bimbingan Massal (BIMAS)"	• BIMAS is an agricultural diversification programme from the government that includes a rural credit component with the aim of providing small loans to farmers at below market rates

		• BRI started to establish BRI units
1984	BRI managed its own commercial micro business and channelled it through BRI units	• This is after the Indonesian government stopped the BIMAS programme
1992	The government of Indonesia changed the legal entity of BRI to a limited liability company or perusahaan perseroan (persero)	• This was based on government regulation no. 21/1992
2003	BRI was listed on the Jakarta Stock Exchange (now Indonesia Stock Exchange)	• In November 10, 2003 BRI started to sell its shares through an IPO with the ticker "BBRI" • BBRI now incorporated in LQ-45 or blue chip shares on the Indonesia Stock Exchange (BEI)
2007	BRI established its subsidiary Bank BRI Syariah	• BRI acquired Bank Jasa Artha and then converted into a PT. Bank BRI Syariah (BRI's Islamic bank)
2009	BRI started its real-time online interconnection for its whole network	• BRI involved 6,480 work units in this event
2013	BRI started its Hybrid Banking service	• BRI's Hybrid Banking is self-service banking • This service was the first in Indonesia
2014	BRI is a bank that has the most automated teller machines (ATM) and has the biggest electronic data capture (EDC) network in Indonesia	• ATM: 20,792 units • EDC: 131,204 units • BRI has 50 million customers • In April 28, 2014 BRI signed a contract with Space System/Loral (SSL) and Arianespace to launch its own satellite named Satelit BRI (BRIsat)

Source: Bank Rakyat Indonesia (2014); The World Bank (2012).

Table 2.4 shows the history of the development of PT. Bank Rakyat Indonesia (persero) Tbk. The milestones for BRI began in 1895 under the name *De Poerwokertosche Hulp en Spaarbank der Inlandsche Hoofden*. The bank began by managing trust funds from society and was a mosque-based association. The funds were redistributed to society in a simple scheme.

The bank changed its name over the years. In 1912, it changed to *Centrale Kas Voor Volkscredietwezen*; under Japanese colonisation in 1942 it was called *Syomin Ginko*; and in 1946 it was nationalised by the Indonesian government and changed its name to Bank Rakyat Indonesia (BRI). In 1968, the Indonesian government changed its name to Bank Koperasi Tani Nelayan (BKTN) and in 1968 changed its name back to BRI. Finally, in 1992, after the change in legal status to a limited liability company or perseroan terbatas (PT), the official name became PT. Bank Rakyat Indonesia (Bank Rakyat Indonesia, 2016).

In 1969, the Indonesian government appointed BRI to distribute credit to Indonesians through BIMAS (Bimbingan Massal), then, in 1984, BRI started to manage its own commercial micro business through its most successful division, the micro-banking division, which has BRI units, previously known as BRI Unit Desa. The BRI Unit Desa reached break-even point within 18 months and earned a

profit of over USD 25 million in 1989. During 1984 to 1990, BRI Unit Desa distributed 7.9 million loans, valued at USD 614.5 million with an average of USD 340 per loan (Boomgard & Angell, 1990; Seibel, 2005a).

BRI wanted to expand its business and become a more successful state-owned company, therefore, in 2003, it listed on the Jakarta stock exchange (now the Indonesia stock exchange). The Indonesian government owned 56.75% and 43.25% of the shares were owned by the public. The bank's performance after going public increased significantly with the value of its stock increasing approximately 30 times from 2003 to 2014 and profit reaching trillion rupiahs.

In 2014, BRI served 50 million customers with a network of 10,413 offices and, in 2017, to upgrade its communication network and achieve integrated banking, it launched its own satellite. The satellite allows BRI to connect its office network from headquarters to Teras BRI (mobile) effectively (Bank Rakyat Indonesia, 2014; Fahlevi, 2015).

Table 2.5 BRI's office network.

Type	2010	2011	2012	2013	2014
Headquarters	1	1	1	1	1
Regional Offices	18	18	18	18	19
Branch Offices	413	431	446	453	461
Subsidiary Branch Offices	470	502	545	565	585
Cash Offices	822	870	914	950	971
BRI Units	4,649	4,849	5,000	5,144	5,293
Teras BRI	617	1,304	1,778	2,212	2,457
Teras BRI (mobile)	-	100	350	465	610
Inspection Offices	14	14	16	17	17
Total	**7,004**	**8,089**	**9,068**	**9,825**	**10,413**

Source: Bank Rakyat Indonesia (2014).

Table 2.6 BRI's subsidiary companies.

Company Name	Type	Dates of Shares Subscription from BRI	BRI's Shares (%)	Commencement Date
PT. Bank BRI Syariah	Islamic Commercial Bank	19 December 2007	99.99	16 October 2008
PT. Bank Rakyat Indonesia Agroniaga Tbk.	Commercial Bank (private)	3 March 2011	80.43	8 February 1990
BRIngin Remittance Co. Ltd.	Remittance Company	16 December 2011	100	7 April 2005

Source: Bank Rakyat Indonesia (2014).

BRI has various types of office networks across Indonesia. It has a headquarters office; regional offices; branch offices; subsidiary branch offices; cash offices; BRI units; Teras BRI; Teras BRI (mobile) and inspection offices. The BRI office network has increased gradually from 7,000 in 2010 to 10,000 offices in 2013. In 2014, BRI had over 10,000 offices across the archipelago (see Table 2.5) which means it has the biggest office network in Indonesia. BRI believes that there is still a large opportunity in the micro banking business in Indonesia, especially in remote areas (Bank Rakyat Indonesia, 2014).

Three subsidiary companies are owned by BRI. They are PT. Bank BRISyariah; PT. Bank Rakyat Indonesia Agroniaga Tbk (BRIAGRO); and BRIngin Remittance Co. Ltd (BRC) (see Table 2.6). All three subsidiary companies are important and support BRI in some ways. As the third biggest Islamic bank in Indonesia, Bank BRISyariah is important for BRI to enter into the Islamic banking market. By utilizing BRI's office network across Indonesia, BRISyariah can develop Islamic banking business easily and compete with other Islamic banks. In December 2013, BRISyariah was appointed by the Indonesian government as one of the Islamic banks that can receive and manage the Hajj fund or BPS BPIH (Bank Penerima Setoran Biaya Penyelenggaraan Ibadah Haji).

BRIARGO is important for BRI because it focuses on the agribusiness sector. BRIAGRO has a collaborative agreement with BRI especially on funding products. All BRIAGRO customers can easily make transactions on all BRI's ATMs across Indonesia. Finally, BRC is also important for BRI to provide a competitive advantage especially on remittance business for Indonesian labour in Hong Kong. BRC has implemented the BRIFAST online system with BRI; this system is integrated with BRI's office network in Indonesia.

Bank BRISyariah started its official operation on 16 October 2008. This company was initially Bank Jasa Artha acquired by BRI in 2000 and was converted to Bank BRISyariah to serve customers with *shari'a* banking preferences. BRISyariah also focusses on micro-business. In 2014, there were 311 *shari'a* micro-units across Indonesia (Bank Rakyat Indonesia Syariah, 2014).

BRIARGO started its operation on 8 February 1990 and was acquired by BRI on 3 March 2011. In 2012, the bank changed its name to PT. Bank Rakyat Indonesia Agroniaga Tbk or BRIARGO. In 2014, it had a total office network of 35 offices, 3 cash offices, 1 payment point, 42 ATMs and 785 officers that focussed on agriculture and the agribusiness sector in Indonesia. The shareholder composition consists of 80.42% of shares held by BRI, Dana Pensiun Perkebunan (pension fund) 14.03% and 5.55% held by the public (Bank BRI Agro, 2014). BRIAGRO exhibited good performance in 2014 with a significant increase in profit from IDR 52 billion in 2013 to IDR 62 billion (18.23%). The increase in profit was due to an increase in credit, 26.93% higher than in 2013 (Bank BRI Agro, 2014).

As a bank that focuses its business on supporting agribusiness, most credit from BRIAGRO is distributed in this sector. Since its first establishment, BRIAGRO has distributed 60-75% of total credit in the agribusiness sector. The clients of BRIAGRO include PT Perkebunan Nusantara, PT Shang Hyang Seri, PT Pertani, PT Pupuk Nusantara, and Perum Perhutani who are engaged in agribusiness. BRIAGRO's financing focuses on off and on farm agribusiness and an example of on farm financing is financing to palm oil, coffee and cocoa plantations which are competitive commodities in the market. An example of off farm financing is working capital financing for agribusiness companies (Bank BRI Agro, 2014).

BRC operated as a subsidiary of BRI from 16 December 2011. In October 2012, the financial institution changed its name to BRI Remittance or BRC and is based in Causeway Bay, Hong Kong. In Hong Kong, BRC offers services to transfer money to Indonesia named BRIFast, which is linked to the BRI network in Indonesia; customers can withdraw from 9,000 BRI offices across Indonesia. BRC also sets up savings accounts in Hong Kong for its customers called BRItAma (Bloomberg, 2015; BRI Remittance, 2013).

The micro-banking division of BRI is called the BRI unit. Teras BRI and Teras BRI (mobile) are sub-outlets of the BRI unit and part of the micro-banking division. In 2014, the total network of BRI's micro-banking division was made up of 8,360 offices. In 2014, BRI's micro-banking division office network was made up of 5,293 offices of the BRI unit, 2,457 offices of Teras BRI, and 610 units of mobile Teras BRI (see Table 2.5).

Total loans distributed by the micro-banking division in 2014 totalled over 150 trillion rupiahs serving over 7.3 million micro-customers. The BRI's micro credit in 2014 increased to 21.1 trillion rupiahs or 15.99% over 2013. This increase was due to the strategies adopted by BRI in 2014, one of which was to expand the main unit of the micro-banking division, which is Teras BRI. In 2014, BRI added 251 new Teras BRI and 145 new Teras BRI (mobile) generating Teras BRI 3,067 units. This expansion was followed by increases in productivity. The total productivity for each Teras BRI in 2014 increased 14% from 2013. This makes the BRI micro-banking division a leader in the micro-finance market in Indonesia (Bank Rakyat Indonesia, 2014).

Table 2.7 BRI's financial summary (billion IDR).

Description	2010	2011	2012	2013	2014
Total Assets	404,286	469,899	551,337	626,183	801,955
Total Earning Assets	379,696	432,647	499,042	568,546	728,094
Third Party Fund	333,652	384,264	450,166	504,281	622,322
Net Income for the Year	11,472	15,088	18,687	21,354	24,254

Source: Bank Rakyat Indonesia (2014).

Table 2.8 BRI's financial performance (percentage).

Description	2010	2011	2012	2013	2014
ROA	4.64	4.93	5.15	5.03	4.74
ROE	43.83	42.49	38.66	34.11	31.22
NIM	10.77	9.58	8.42	8.55	8.51
BOPO (Operational Cost to Revenue)	70.86	66.69	59.93	60.58	65.37
LDR	75.17	76.20	79.85	88.54	81.86
NPL (gross)	2.78	2.30	1.78	1.55	1.69

Source: Bank Rakyat Indonesia (2014).

Based on BRI's financial summary from 2010 to 2014 (see Table 2.7), all financial indicators have experienced significant growth with total assets increasing from IDR 404 trillion in 2010 to IDR 801 trillion (USD 59 billion) in 2014. Total earning assets increased from IDR 379 trillion in 2010 to IDR 728 trillion (USD 53 billion) in 2014. The third party fund increased from IDR 333 trillion in 2010 to IDR 622 trillion (USD 45 billion) in 2014. Net income increased from IDR 11 trillion in 2010 to IDR 24 trillion (USD 1.78 billion) in 2014 (Bank Rakyat Indonesia, 2014).

Based on BRI's financial performance data from 2010 to 2014 (see Table 2.8), financial indicators such as ROA, ROE, NIM, and BOPO fluctuated during the period. In 2014, BRI's ROA decreased to 4.74% from 5.03% in 2013. This is because of increased liquidity, especially in BRI's securities. ROE is still positive, but decreased from 34.11% in 2013 to 31.22% in 2014, because of the increased cost of funds. The BOPO ratio, which reflects efficiency, increased from 60.58% in 2013 to 65.37% in 2014. This was because of the high inflation rate in 2014. NIM decreased marginally from 8.55% in 2013 to 8.51% in 2014. LDR decreased from 88.54% in 2013 to 81.86% in 2014, whereas NPL increased from 1.55 in 2013 to 1.69 in 2014. This was because of the macro conditions and political instability in Indonesia during 2014 (the year of general and presidential elections) (Bank Rakyat Indonesia, 2014).

(2) Bank Perkreditan Rakyat (BPR)

BPR, the people's credit bank, is Indonesia's rural bank which started business in early 1990. BPR business focuses on providing financial services in rural areas. After the banking reform and implementation of the law Paket Kebijakan Oktober (PAKTO 27) in 1988, which was designed to promote new commercial banks in Indonesia, BPRs can be owned by individuals. This regulation led to an increase in the private banking sector in Indonesia especially for BPRs (Seibel, 2005a; Seibel & Ozaki, 2009; Tambunan, 2015).

Table 2.9 Growth of BPRs (rural bank).

Description	2010	2011	2012	2013	2014
Total Rural Banks	1,706	1,669	1,653	1,635	1,643
Total Bank Offices	3,910	4,172	4,425	4,678	4,895

Source: Indonesia Financial Services Authority (2014a).

Table 2.10 BPRs' financial performance (percentage).

Description	2010	2011	2012	2013	2014
ROA	3.16	3.32	3.46	3.44	2.98
ROE	26.71	29.46	32.63	32.41	27.89
LDR	79.02	78.54	76.63	84.34	79.79
NPL	6.12	5.22	4.75	4.41	4.75

Source: Indonesia Financial Services Authority (2014a).

In December 2014, there were 1,643 BPRs with 4,895 offices in Indonesia (see Table 2.9). BPRs' total assets were 89 trillion rupiahs and the bank served over 13 million clients. Based on this figures, 62% of BPRs and 74% of its offices are concentrated in Java. The number of BPR rural banks decreased slightly during 2010 to 2014. However, the total bank offices experienced significant growth during the same period (see Table 2.9). This is because some BPRs have merged into bigger banks, for instance, in East Java there were 66 units of BPR which merged with BPR Jatim (Bank BPR Jatim, 2015). A small number of other BPRs have had their licences revoked by the central bank of Indonesia because of poor performance. However, there is no significant impact on the whole industry (Praditya, 2013).

Based on BPRs' financial performance data from 2010 to 2013, ROA and ROE increased. However, in 2014 ROA and ROE of BPRs decreased to 2.98 and 27.89, respectively (see Table 2.10). The decrease in ROA and ROE in 2014 was because of the instability of the macro conditions and the political situation that impacted the banking industry in Indonesia (Bank Rakyat Indonesia Syariah, 2014). Other indicators such as LDR and NPL fluctuated during 2010 to 2014; in 2014, the LDR decreased from 83.34% in 2013 to 79.79% and the NPL increased from 4.41% in 2013 to 4.75% in 2014. The decrease in LDR means there is excess liquidity and a need to disburse more finance while an increase in NPL means that banks must allocate more funds to cover non-performing loans (Indonesia Financial Services Authority, 2014a).

Starting from 31 December 2013, the regulatory and monitoring function for the bank was undertaken by OJK from the Central Bank of Indonesia (BI). BI focuses only on managing inflation and is responsible for monetary stability. OJK is responsible for monitoring all financial institutions in Indonesia including BPRs (Central Bank of Indonesia, 2015; Gallardo, 2001; Gera, 2013; Indonesia Financial Services Authority, 2014a).

2.1.2 Semi-formal MFIs in Indonesia

According to Seibel and Dwi Agung (2006), semi-formal MFIs in Indonesia include various types of cooperatives and so-called village banks (bank desa). Semi-formal MFIs in Indonesia are outside the regulations and supervision of the financial authorities. Some financial cooperatives in Indonesia may be registered and supervised under the MoCMSMEs and some may be unregistered. Financial cooperatives registered under the MoCMSMEs are considered more "formal" than unregistered ones. This is because they still receive assistance from and are supervised by the government.

Table 2.11 Financial cooperatives registered under MoCMSMEs.

Types	Total Institutions	No of Clients
Koperasi Simpan Pinjam (KSP)/Unit Simpan Pinjam (USP) savings and loan cooperatives	38,083 [a]	16,871,000 [a]
KJKS/UJKS Islamic financial services cooperatives	4,117 [b]	762,000 [b]

Source: Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia (2005); Sugianto (2012).
[a]Year 2005; [b]Year 2012.

There are two types of financial cooperatives that registered under the MoCMSMEs. The first types are Koperasi Simpan Pinjam (KSP) and Unit Simpan Pinjam (USP) that operate within the conventional system (non-Islamic). In 2005, there were 38,083 units of KSP and USP in Indonesia serving over 16 million clients (see Table 2.11). The second type are Koperasi Jasa Keuangan Syariah (KJKS) and Unit Jasa Keuangan Syariah (UJKS) that operate within the *shari'a* system (Islamic). In 2012, there were 4,117 units of KJKS and UJKS in Indonesia serving over 700,000 clients (see Table 2.11).

These two types of financial cooperatives are regularly monitored and supervised by the MoCMSMEs. At the end of every year, all cooperatives have to arrange an annual members meeting to report on all activities as well as distribute the cooperative's profit to members. Financial and activities reports have to be submitted to the MoCMSMEs after the annual meeting. The purposes of MoCMSMEs' reports are to obtain cooperative information in order to classify them based on their size as it will easier for MoCMSMEs to monitor and support the cooperative (Indonesia Financial Services Authority, 2015b; Ministry of Cooperatives and Micro and SMEs of Republic of Indonesia, 2007).

The Indonesian government through OJK, issued some regulations for MFIs in Indonesia. First, there are only two legal statuses of "formal" MFIs in Indonesia, cooperative or limited liability company. This means that only registered MFIs under the supervision of the government are eligible for official assistance. Second, all MFIs under government supervision should receive their business licences

from OJK or a deed of incorporation of the cooperative from the MoCMSMEs (Indonesia Financial Services Authority, 2015b).

2.1.3 Informal MFIs in Indonesia

Informal MFIs in Indonesia have a long history and include Self-Help Groups (SHGs), Channelling Groups, Rotating Savings and Credit Associations (ROSCAs), *Baitul Maal Wat Tamwil* (BMT), *Baitul Tamwil* Muhammadiyah (BTM), and *Baitul Qirad* (BQ) (Adnan & Ajija, 2015; Imady & Seibel, 2006; Seibel, 2005a). SHGs in Indonesia may be those established and managed by the government, community organisations that are connected with government programs, or NGOs. For example, the government program in 1993 which was called INPRES Desa Tertinggal (IDT), provided $600 million to 28,000 rural villages and involved SHGs and NGOs (Robinson, 2002). Some other SHGs operate with *shari'a* principles, such as BMT with SHG legal status (Conroy, 2003).

Meanwhile, arisans are a traditional group, an Indonesian version of ROSCA and include a social gathering as well, whereby arisans generally have a fixed interval meeting (every month or year) that is held in a member's house. Each member in the group is paid a certain amount of money agreed within the group. Members that get a rota (drawn by lot) will received all the money. However, he/she is then responsible for holding the next arisan meeting and providing food for the meeting (Conroy, 2003). As an informal group, arisans provide flexible rules for members. These rules are decided and managed based on consensus. The main products of this type of microfinance services are savings and credit for members (Conroy, 2003).

Informal Islamic MFIs comprise BMTs, which follow the regulations of cooperatives or SHGs. If a BMT follows cooperative rules, it will be regulated under the cooperative law (Cooperative Act No.25/1992), supervised by MoCMSMEs and considered to be semi-formal Islamic MFIs. However, if a BMT is established as an SHG there will be no rules regulating it; it is formed by a group of people and considered to be an informal Islamic MFI. The products and services offered by BMT are similar to KJKS and UJKS, it is only the legal entity that is different.

Table 2.12 Informal MFIs in Indonesia.

Types	Description
Self-Help Groups (SHG)/ Kelompok Swadaya Masyarakat (KSM)	Some BMTs are in the form of SHGs or KSMs and others such as KJKS and UJKS are under the MoCMSMEs
Channelling Groups	In 2003 there were about 800,000 channelling groups in Indonesia
Rotating Savings and Credit Associations (ROSCAs, Arisans)	There are millions of ROSCAs in Indonesia known as Arisans from indigenous origins
Baitul Maal Wat Tamwil (BMT)	Most BMTs are under the guidance of the Centre for Micro Enterprise Incubation (PINBUK) or associated with Induk Koperasi Syariah BMT (Inkopsyah BMT)
Baitul Tamwil Muhammadiyah (BTM)	These comprise 5% of Islamic cooperatives, guided by Muhammadiyah since 1999
Baitul Qirad (BQ)	Term used in the Aceh province to denote Islamic cooperatives or BMTs

Source: Seibel and Dwi Agung (2006); Imady and Seibel (2006); Adnan and Ajija (2015).

In Indonesia, there is a wide variety of SHGs called KSM. An example of an SHG is PHBK under the Bank Indonesia's Program Linking Banks and SHGs. PHBK is a financing scheme from a regional/local bank for small and medium enterprises (SMEs). In the PHBK scheme, SMEs also receive assistance from the local government after obtaining finance from the bank. The aim of the PHBK is to give financial access to local SMEs in order to develop their businesses (Seibel & Dwi Agung, 2006; Zain et al., 2006).

In the context of Islamic MFI terms, they are known by other names. First is *Baitul Maal Wat Tamwil* (BMT), which may have a semi-formal or informal legal status. Semi-formal Islamic MFIs follow the form of a cooperative and are registered under MoCMSMEs (known as KJKS and UJKS), whereas informal Islamic MFIs are established as SHGs. If the legal status of *Baitul Maal Wat Tamwil* (BMT) is a SHG, they will receive guidance from PINBUK or can be associated with Induk Koperasi Syariah BMT (Inkopsyah BMT) (Seibel & Dwi Agung, 2006; Zain et al., 2006). The second is *Baitul Tamwil* Muhammadiyah (BTM), an Islamic MFI guided by Muhammadiyah, the second-largest Islamic mass organization in Indonesia (Adnan & Ajija, 2015; Imady & Seibel, 2006). Finally, *Baitul Qirad* (BQ) is a term for Islamic cooperatives in Aceh province (see Table 2.12). Further BMTs, BTMs, and BQs that follow a cooperative form, receive formal assistance from and monitoring by the government.

However, BMTs, BTMs and BQs that follow the SHG form will not receive formal assistance from and monitoring by the government but receive assistance only from PINBUK or Inkopsyah BMT. This is because they are not registered under the government (Adnan & Ajija, 2015; Imady & Seibel, 2006).

BMTs are an Islamic MFI that mix commercial and social attributes in their business products, for example, BMTs can generate profit from profit and loss sharing (PLS) or get a margin/fee from a non-

PLS mechanism and can also collect zakah[6], *infaq*[7] and *sadaqat*[8] or *waqf*[9] and distribute it for social purposes (Imady & Seibel, 2006). According to Hassan (2010), the integration of social dimensions such as *zakah* and *waqf* with commercial products such as *mudarabah* and *musharakah* in Islamic MFIs will benefit the poorest better. This is because Islamic MFIs can use *zakah* funds to fulfil the basic consumption of its clients and *waqf* funds may be used as working capital for micro-businesses (Hassan, 2010). Islamic MFIs can use *mudarabah* or *murabahah* schemes to develop their clients' businesses.

2.2 Development of Islamic finance in Indonesia

Islamic finance has experienced rapid and significant growth over the past four decades. This is because Muslims comprise over 21% of the world's population with USD 1 trillion of assets to invest. Islamic finance is a promising financial industry and the industry's assets are forecast to reach USD 3 trillion in 2020. With this estimate, the compounded asset growth rate will be 17.3% (Azmat, Skully, & Brown, 2014, 2015; Chong & Liu, 2009; El-Komi & Croson, 2013; Ibrahim, 2015; Sumarti, Fitriyani, & Damayanti, 2014). The global Islamic resurrection was the main cause of significant growth in Islamic finance, and at the moment the Islamic finance industries not only fulfil Muslim needs, but have also become an option for non-Muslims (Chong & Liu, 2009; Ibrahim, 2015).

According to Ainley, Mashayekhi, Hicks, Rahman, and Ravalia (2007b) and Huda (2012), the development of Islamic finance institutions in the modern era started with the establishment of an Islamic bank in the Middle East in the 1960s. The combination of Islamic finance and microfinance was first elaborated by Rahul and Sapcanin in 1998 (Akhter et al., 2009).

Indonesia has a population of over 250 million with 56 million households and 87.21% of the population are Muslim (approximately 218 million people) (Masyita & Ahmed, 2011; Ministry of Religious Affairs of the Republic of Indonesia, 2013; Statistics Indonesia, 2014). Based on those statistics, the availability of Islamic financial institutions in Indonesia is crucial. This is because Muslims have some restrictions in conventional finance; in particular, they are prohibited from involvement in transactions that contain *riba* (interest).

[6] Compulsory charity for Muslims (if their wealth exceeds the condition (nisab)), equal to 85 grams of gold which they must hold for a year (Haul)). It is for consumption purposes and there are certain zakah rules in Islam such as from whom zakah is collected, at what rate, and who can benefit from zakah (Ahmed, 2007; Obaidullah, 2008).
[7] Charitable spending (Obaidullah, 2008).
[8] Optional charity which can be used for productive activities (Ahmed, 2007).
[9] *Sadaqah jariyah* or continous *sadaqah*. The *waqf* is created when somebody gives away an asset for the benefit of the society. There is also the concept of cash *waqf* that can be used in order to benefit society (Ahmed, 2007).

An Islamic financial institution was first established in Indonesia in 1990. This was primarily in response to a request from Islamic scholars and organizations. Islamic cooperatives were established in 1990, Islamic rural banks in 1991 and the Islamic commercial bank in 1992 (Seibel, 2008). There was no specific legal foundation for Islamic financial institutions, especially Islamic banks at that time and they were just accommodated in law No. 7/ 1992 in one sentence "bank with a profit and loss sharing system".

In 1998, the Indonesian government and parliament implemented a law with more specific details for Islamic banks in law No. 10/1998 that recognizes a dual banking system in Indonesia, namely conventional and Islamic banking systems. More specific legal foundations for Islamic banks in Indonesia are regulated by law No. 21/2008. This law led to a boost in the number of full Islamic banks in Indonesia from 5 to 11 in less than 2 years (2009-2010) (Indonesia Financial Services Authority, 2015a; Seibel, 2008).

Table 2.13 Highlights of Islamic finance development in Indonesia.

Year	Milestones	Description
1990	Islamic finance started to develop in Indonesia	• Owing to the initiatives from Islamic scholars and organizations • Initially started with Islamic cooperatives
1991	Islamic rural bank/ Bank Pembiayaan Syariah (BPRS) initial growth	• Experienced 12% average growth per year • The four BPRSs were licensed, three in Bandung (West Java) and one in Aceh • Until 1996 there was a gradual expansion of BPRSs
1992	The establishment of the first Islamic commercial bank in Indonesia	• Approval of the first Islamic commercial bank in Indonesia, named Bank Muamalat Indonesia (BMI) • Establishment of Indonesia Islamic bank association/ Asosiasi Bank Islam Indonesia (Asbisindo)
1999	Second Islamic commercial bank established	• Bank Syariah Mandiri (BSM) was the second Islamic commercial bank in Indonesia • The first sharia unit of a conventional commercial bank was also established in this year • This year was a stagnating period for BPRSs, however, the Islamic bank started its gradual expansion until 2003
2010	Indonesian government issued regular *sukuk* (Islamic bonds)	• Regular rupiah *sukuk* were issued once every two weeks • Most of Indonesia's *sukuk* are short term (less than a year)
2014	Indonesia ranked 7th in the Global Islamic Finance Report for the Islamic Finance Country Index (IFCI)	• 12 Islamic commercial banks • 22 Islamic business units in conventional banks • 163 Islamic rural banks • 4,117[a] units of Islamic cooperatives or KJKS and UJKS under MoCMSMEs • Indonesia is a member of Islamic Development Bank (IDB), Islamic Financial Services Board (IFSB), the International Islamic Financial Market (IIFM), and the

		International Islamic Liquidity Management Corporation IILM • Indonesia adopted the regulations of IFSB and the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI)

Source: Lawrence (2014); Seibel (2008); Seibel and Dwi Agung (2006); Global Islamic Finance Report (2014); Sugianto (2012).
[a]Year 2012.

Table 2.13 shows the Islamic finance development in Indonesia. The first Islamic financial institutions in Indonesia were Islamic cooperatives followed by an Islamic rural bank and an Islamic commercial bank. The Indonesian government started to issue regular *sukuk* (Islamic bonds) in 2010 (Lawrence, 2014; Seibel, 2008; Seibel & Dwi Agung, 2006). According to the Global Islamic Finance Report (2014), Indonesia achieved 7th rank in 2014 in the Islamic Finance Country Index (IFCI).

Besides the development of institutions, there were also many associations concerned with Islamic economic development in Indonesia. Some of the associations are: Pusat Komunikasi Ekonomi Syariah (PKES); Dewan Syariah Nasional – Majelis Ulama Indonesia (DSN-MUI); Masyarakat Ekonomi Syariah (MES); Ikatan Ahli Ekonomi Islam Indonesia (IAEI); Asosiasi Bank Syariah Indonesia (Asbisindo); Asosiasi Asuransi Syariah Indonesia (AASI); Asosiasi Perusahaan Penjaminan Indonesia (Asippindo); Badan Amil Zakat Nasional (Baznas); Badan Wakaf Indonesia (BWI); Forum Zakat; Ikatan Saudagar Muslim Indonesia (ISMI); and Himpunan Ilmuwan dan Sarjana Syariah Indonesia (HISSI). In August 2013, all 12 associations signed a mutual agreement named the Sharia Economic Movement or Gerakan Ekonomi Syariah (GRES).

The aim of this movement is to increase the awareness of Indonesians about *shari'a* economics (Ministry of Religious Affairs of the Republic of Indonesia, 2013). Some of these associations or organisations also have important roles in and contributions to Islamic economic development in Indonesia. Majelis Ulama Indonesia or the Council of Indonesian Ulema (DSN-MUI), for example, is responsible for the *shari'a* compliance of all Islamic financial institutions' products and services in Indonesia. Meanwhile, IAEI and MES were established in Indonesia in order to accommodate Islamic economics scholars and to accelerate Islamic economic development, respectively. The aim of PKES is to provide socialization and education about Islamic economics to Indonesians. Baznas is a government organisation with the objective to collect and distribute *zakah*, *infaq*, and *sadaqat* at the national level. BWI is also a government organisation; its aim is to manage *waqf* in Indonesia (Badan Amil Zakat Nasional, 2016; Badan Wakaf Indonesia, 2012; Ikatan Ahli Ekonomi Islam Indonesia, 2013; Masyarakat Ekonomi Syariah, 2008; Pusat komunikasi Ekonomi Syariah, 2013; The Council of Indonesian Ulama, 2013).

2.3 Islamic financial institutions in Indonesia

Indonesia has several types of Islamic financial institutions, such as Islamic banks, Islamic rural banks, Islamic insurance, Islamic MFIs, etc. Education and awareness of Islamic finance in Indonesia are conducted regularly either by the government or by the associations.

Table 2.14 Islamic financial institutions in Indonesia (December 2014).

Types	No of units	No of offices
Islamic Commercial Bank	12	2,151
Islamic Business Unit (from Conventional Bank)	22	320
Islamic Rural Bank (BPRS)	163	439
Islamic Insurance	5	N/A
Islamic Insurance Unit	44	N/A
Islamic Financing Institution	3	N/A
Islamic Financing Unit	41	N/A
Islamic Venture Capital	4	N/A
Islamic Credit Insurance	2	N/A
Islamic Credit Insurance Unit	1	N/A
Islamic financial services cooperatives (KJKS/UJKS)	4,117 [a]	N/A
Baitul Maal Wat Tamwil (BMT)	5,000 [a]	22,000 [a]
Baitul Tamwil Muhammadiyah (BTM)	330 [b]	N/A
Baitul Qirad (BQ)	32 [a]	N/A

Source: Indonesia Financial Services Authority (2014a); Indonesia Financial Services Authority (2014b); Sugianto (2012); Fauzia (2013); Marhiansyah (2012).
[a]Year 2012; [b]Year 2013.

In December 2014, there were 12 full Islamic commercial banks in Indonesia. In addition, there are 22 Islamic business units of conventional banks (see Table 2.14). The market share of Islamic banks in August 2014 was 5.5% or equal to 198.98 trillion rupiahs. There is still a huge opportunity for Islamic banks to expand in Indonesia. There are Islamic rural banks, Islamic insurance companies, Islamic financing institutions, Islamic venture capital, and Islamic credit insurance to support the Islamic banking sector. In the micro sector, KJKS and UJKS are supervised by the MoCMSMEs and in the informal sector these are BMTs, BTMs, and BQs (Dwiantika, 2014; Indonesia Financial Services Authority, 2014a, 2014b).

2.4 Islamic MFIs in Indonesia

Islamic MFIs follow Islamic law that parallels Muslim beliefs. Islamic MFIs' products and services must be free from certain elements[10] forbidden in Islam (Obaidullah, 2008). Based on a global survey conducted by the Consultative Group to Assist the Poor (CGAP) in 2008 and 2009 cited in El-Komi and Croson (2013), 40% of the world's poor Muslims reject loans from conventional MFIs for religious reasons. The global success of Islamic finance has influenced the establishment of other financial industries including Islamic MFIs (Nasdaq OMX, 2012). The popularity and rapid development of MFIs has led to the combination of this financing vehicle with Islamic finance (Karim et al., 2008).

Based on a study by Abdouli (1991) cited in Dhumale and Sapcanin (1999), there are three basic Islamic finance schemes that could combine with MFIs to build a successful microfinance programme: *mudarabah* (trustee financing), *musharakah* (equity participation), and *murabahah* (cost plus mark-up). The CGAP survey cited in Nasdaq OMX (2012) on Islamic MFIs worldwide revealed that there is still a gap between the demand and supply of this institution. Based on the CGAP (2008) survey, Islamic MFIs comprise 0.005% of global MFIs and are mainly concentrated in Indonesia, Bangladesh and Pakistan. Islamic MFIs operate globally in about 32 countries across six continents, North Africa, Sub-Saharan Africa, the Middle East, Central Asia, South Asia, and Southeast Asia (Nasdaq OMX, 2012).

The establishment of Islamic financial institutions in Indonesia was initiated by Islamic MFIs. The concept of an Islamic bank in Indonesia was trialled first on a limited scale through Islamic MFIs named Bait At-Tamwil Salman ITB in Bandung and the Ridho Gusti cooperative. For Indonesians, these institutions are important because they provide financial access for poor people in rural areas based on *shari'a* principles (Indonesia Financial Services Authority, 2015a; Seibel & Dwi Agung, 2006).

The first Islamic cooperative in Indonesia, Ridho Gusti, was established in 1990 in Bandung. In 1995, PINBUK started promoting Islamic cooperatives under the new name *Baitul Maal Wat Tamwil* (BMT) (Seibel & Dwi Agung, 2006). There are different types of Islamic MFIs in Indonesia with several kinds of legal entity. Most Islamic MFIs in Indonesia follow the cooperative form to run their business.

[10] It must be free from *riba* (interest), *gharar* (uncertainty/lack of information disclosure), *qimar* (gambling), and *mysir* (games of chance involving deception) (Obaidullah, 2008; Sumarti et al., 2014).

Table 2.15 Islamic MFIs in Indonesia.

Type	Status	Description
KJKS/UJKS Islamic financial services cooperatives	Semi-formal	They receive guidance and supervision from the Ministry of Cooperatives and Micro and Small, and Medium Enterprise (MoCMSMEs)
Baitul Maal Wat Tamwil (BMT)	Informal	Most of the BMTs are not registered under MoCMSMEs. They only receive guidance from the Centre for Micro Enterprise Incubation (PINBUK) or are associated with Induk Koperasi Syariah BMT (Inkopsyah BMT)
Baitul Tamwil Muhammadiyah (BTM)	Informal	They are guided by Muhammadiyah, the second-largest Islamic mass organization in Indonesia, and receive informal supervision from Muhammadiyah economic development centre or Pusat Pengembangan Ekonomi Muhamamdiyah (PPEM)
Baitul Qirad (BQ)	Informal	A uniquely Acehnese term for Islamic MFIs

Source: Seibel (2008); Seibel and Dwi Agung (2006).

Table 2.15 provides some examples of Islamic MFIs in Indonesia such as KJKS/UJKS, BMTs, BTMs, and BQs. KJKS and UJKS are Islamic cooperatives registered under the MoCMSMEs and regulated under the Cooperative Law (Ministry of Cooperatives and Micro and SMEs of Republic of Indonesia, 2007). Some BMTs registered under MoCMSMEs are labelled as KJKS and UJKS (Riwajanti & Asutay, 2015). KJKS are full cooperative institutions that provide finance, investment and savings under Islamic principles, whereas UJKS are business units under the management of cooperatives that provide finance, investment and savings based on Islamic principles. In 2012, there were 4,117 formal Islamic MFIs registered as cooperatives under MoCMSMEs (Sugianto, 2012).

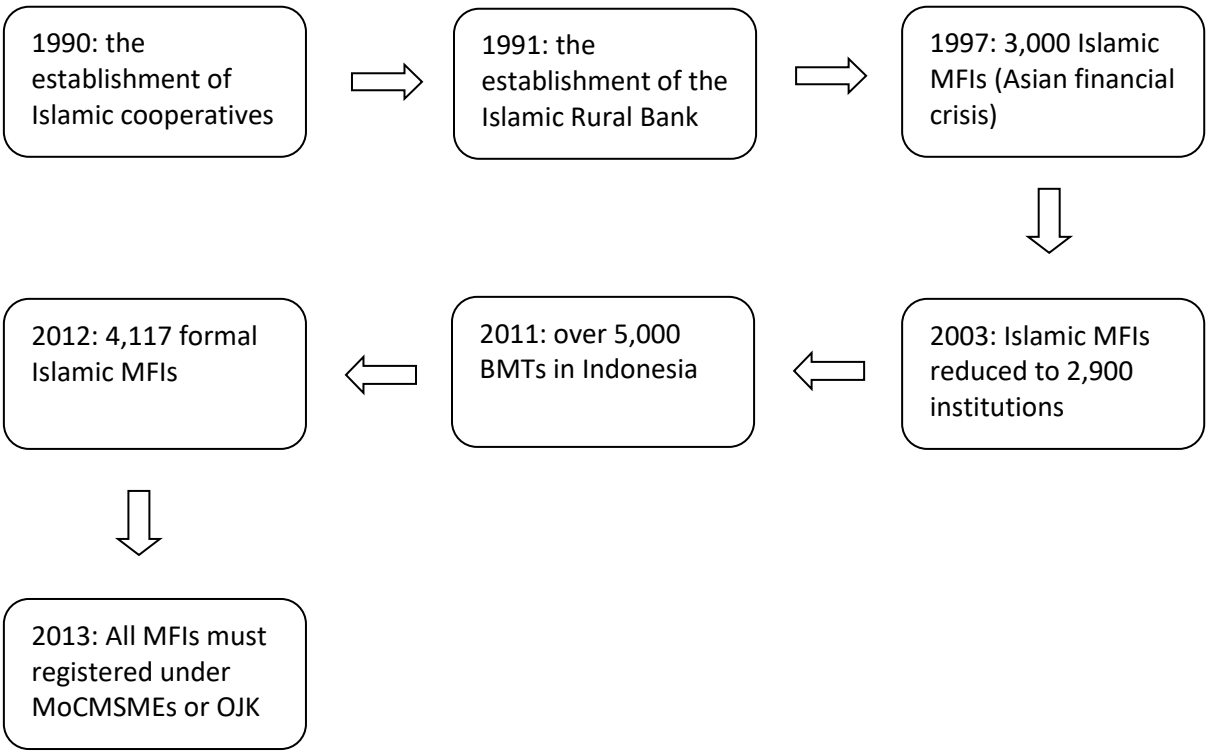
Since the requirements to become a member or obtain financing from Islamic MFIs are less complicated than other financial institutions (e.g. banks), they enable people in the rural areas to access financing. Islamic MFIs' major advantage is they operate with *shari'a* principles. This gives more options for sourcing financing to Indonesians, especially to those who are concerned with their religion. Moreover, most Muslims prefer using financial products which do not contravene their beliefs (Ahmad & Ahmad, 2009; Akhter et al., 2009; Karim et al., 2008; Seibel, 2008). A study by Honohan (2008) cited in Karim et al. (2008) found that 72 percent of people in Muslim majority countries do not use formal financial services even if they are available in their area, because they believe that conventional financial institutions do not follow Islamic principles that contravene their religious beliefs.

According to Adnan and Ajija (2015), the legal entity of a BMT follows the regulations of cooperatives, which are regulated under the Cooperative Law or follow SHG/KSM. In addition, Amin (2004), cited in Adnan and Ajija (2015) reported that BMT can be associated with Induk Koperasi

Syariah BMT (Inkopsyah BMT) or with religious organisations (e.g., *Dompet Dhuafa*). BMTs can become member of Inkopsyah BMT and may use the facilities such as savings and financing from Inkopsyah BMT (Inkopsyah BMT, 2016). Meanwhile, BMTs associated with religious organisations may benefit from the parent organization, for instance, religious organizations such as *Dompet Dhuafa* which supported the establishment of 60 Islamic MFIs including BMTs and initiated BMT association in Indonesia, known as the BMT Centre (Dompet Dhuafa, 2016). BMTs can also be independent.

Establishment of a BMT is usually certified by a notary and the BMT can also request a business certificate from PINBUK. A BMT's source of funds can be from founding members, compulsory and voluntary contributions, donations and loans (Adnan & Ajija, 2015). BMTs must have their own *shari'a* supervisory board and ensure that their products and services follow guidance by DSN-MUI. Conceptually, there are two roles of BMTs, the first is for social purposes, *Baitul Maal,* i.e., for collecting and distributing charitable funds such as *zakah, infaq, and sadaqat.* The second is for economic purposes, *Baitul Tamwil*, which focusses on economic activities such as saving and financing based on sharia principles (Hasbi, 2015; Nasution, 2015).

BMTs have a unique characteristic and are one of the most important types of Islamic MFIs in Indonesia. Unlike banks, BMTs can provide a flexible, rapid financing approval process and *shari'a*-compliant financial access for poor people. This is because most BMTs are formed by community-initiated projects such as from mosques, Islamic boarding schools or Islamic organisations (Riwajanti & Asutay, 2015). The number of BMTs in Indonesia is quite significant; in 2014 there were over 5,000 BMTs with IDR 4.7 trillion in total assets and IDR 4.4 trillion in financing to cover over 3 million clients (Hasbi, 2015; Riwajanti & Asutay, 2015). Figure 2.1 summarises the development of Islamic MFIs in Indonesia.



Source: Indonesia Financial Services Authority (2015b); Seibel and Dwi Agung (2006).

Figure 2.1 Summary of the development of Islamic MFIs in Indonesia.

Islamic MFIs in Indonesia still face several challenges. There is still a lack of prudential regulation and effective supervision of Islamic financial cooperatives, as a consequence, some Islamic cooperatives are technically bankrupt or dormant (Seibel & Dwi Agung, 2006). They need support from the government in order to create healthy Islamic financial cooperatives. Studies on government intervention in Islamic MFIs by Seibel (2008), Seibel and Dwi Agung (2006), Karim et al. (2008), Dusuki (2008), Obaidullah (2008) and Obaidullah and Khan (2008) show that a supporting financial system (soft loans from donors), clear regulation, funding and monitoring are important for the sustainability of Islamic MFIs. Obaidullah and Khan (2008) argue that the government's best support is to provide a good policy environment that allows financial service providers to compete and coexist in order to offer high-quality, low-cost services and products especially to poor clients. However, some programmes are ineffective. This challenge is not only for the Islamic financial cooperatives but also for all financial cooperatives in Indonesia.

In order to overcome these challenges, the Indonesian government through OJK has taken some steps. First, creating a proper database of MFIs in Indonesia by issuing a business licence as, based on Law No. 1 of 2013, all MFIs in Indonesia have to gain a business licence from OJK. Second, every four months, all MFIs are required to submit a financial report to OJK. Third, the legal entity of MFIs in

Indonesia is limited to only either a cooperative or limited liability company. Fourth, regular monitoring and supervision are undertaken by MoCMSMEs or OJK. In March 2016 OJK established the Centre for Microfinance and Financial Inclusion or Pusat Pengembangan Keuangan Mikro dan Inklusi (OJK-Proksi) (Aditiasari, 2016; Indonesia Financial Services Authority, 2015b, 2016). The purpose of this centre is to improve the MFIs' database, to obtain financial inclusion, and finally to help alleviate poverty in Indonesia (Indonesia Financial Services Authority, 2016).

Indonesia has the most differentiated MFIs in the world with three categories of MFIs: formal, semi-formal and informal. There are over 55 million micro, small and medium enterprises in Indonesia. About 98% are micro enterprises and most need support from financial institutions, especially MFIs. Further Indonesia is the world's most populous Muslim country with over 5,000 MFIs that adopt Islamic principles in their operation. In 2015, Indonesia was listed as an emerging leader in the global Islamic financial services industry based on the global Islamic finance report.

2.5 Chapter summary

Microfinance in Indonesia has a long history which started in the late 19th century, initially with banks in rural areas (known as BRIs). In addition, Indonesia has the most differentiated microfinance of any developing country and is also known as the largest Muslim majority country in the world. Out of a population of 250 million, around 87% are Muslim which equals approximately 218 million people. Since Muslims have some restrictions regarding conventional finance (interest is not allowed), the role of Islamic financial institutions is important. Islamic MFIs even have a strategic role because most Indonesians live in rural areas and only MFIs can cover these areas.

An Islamic MFI was first established in Indonesia in 1990 through Bait At-Tamwil Salman ITB in Bandung and the Ridho Gusti cooperative. In general, there are two types of legal status for Islamic MFIs in Indonesia, either as a cooperative or as a limited liability company. If the Islamic MFI status is cooperative, their supervision is under the Ministry of Cooperative or MoCMSMEs; however, if the Islamic MFI status is as a limited liability company, their supervision will under the Indonesia Financial Service Authority or OJK.

Chapter 3

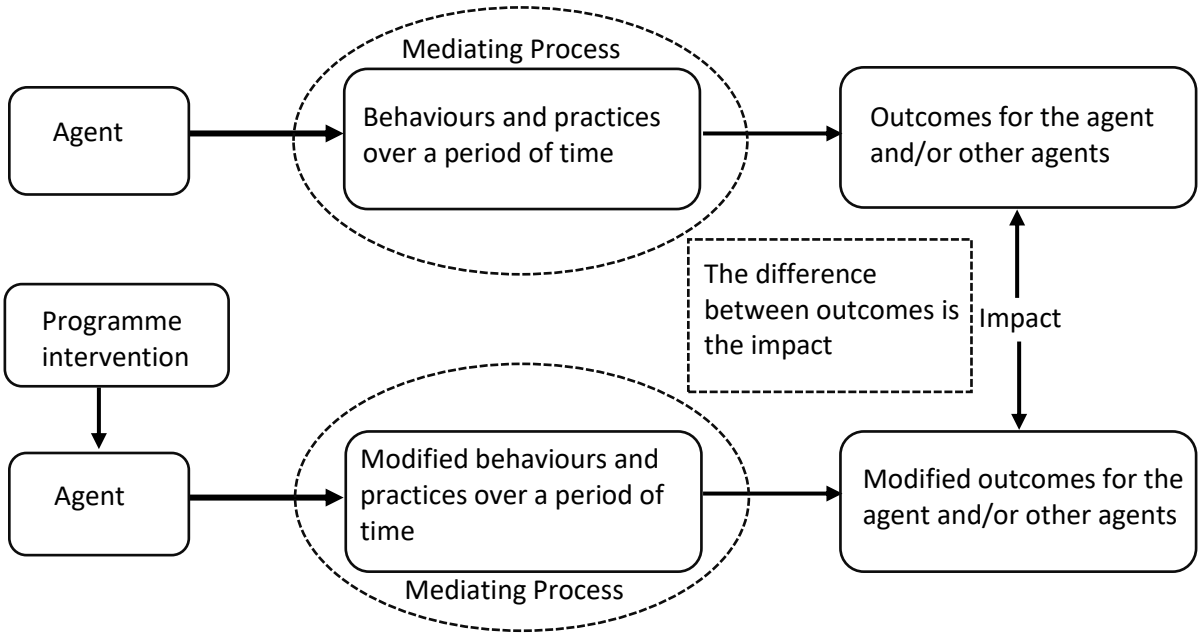
Literature Review

This chapter reviews the empirical models used in examining the impact of Islamic microfinance institutions' (MFIs) financing, *shari'a* compliance and evaluation of Islamic values and factors that influence rural households to become clients of Islamic MFIs. The chapter is organised as follows: Section 3.1 reviews the empirical studies on the impact of Islamic and conventional MFIs' financing. Section 3.2 discusses Islamic MFIs' values and schemes and empirical studies on *shari'a* compliance evaluation. Section 3.3 reviews the two financing mechanisms in Islamic MFIs and Section 3.4 reviews the factors that influence rural households receiving finance/loans from MFIs. Finally, Section 3.5 summarises the review.

3.1 Impact of Islamic MFI financing on rural households

3.1.1 Methodologies of impact assesment

The methodologies for impact assessment are important because they will determine the validity of the impact evaluation. As Hulme (2000) describes it, the main objective of impact assessment studies is to identify the impact (proving) and develop the programme intervention (improving).



Source: Adapted from (Hulme, 1997); Hulme (2000).

Figure 3.1 Impact chain model.

All impact assessment has a conceptual framework and, based on Hulme (2000) study, there are three main components of the conceptual framework: (1) a model of the impact chain that examines the study; (2) the specification of levels of impact that are assessed; and (3) the specification of the types of impact that will assessed.

Hulme (2000) also proposed an impact chain model (see Figure 3.1) in which all microfinance programmes assume that interventions may change human behaviour and practices and lead to achieving the desired outcome. Hulme's model explains that the difference between the outcomes of "agents" (individuals, enterprises, households, populations, policy makers, etc.) that intervene as opposed to the outcomes that would have occurred without intervention is the impact of the programme.

The typical methods adopted in an impact assessment study are sample surveys, rapid appraisal, participation observation, case studies, and participatory learning and action (PLA). A sample survey is a common, popular method in impact assessment (Hulme, 2000). In impact assessment methodology, determining the counterfactual is important whereby we can measure the true impact of the treatment or programme.

Table 3.1 Summary of quantitative methods for impact evaluation.

Categories	Description
Experimental designs (randomized)	Randomization means selection into treatment and control groups is random. There is supposed to be no difference between the treatment and control group (in expectation).
Quasi-experimental designs (non-randomized)	• Matching methods The most extensive use of matching methods is propensity score matching (PSM). PSM tries to match the comparison group with the treatment group. The closer the propensity score, the better the match. • Difference in difference A method that compares the treatment and comparison group, before and after the programme. Some studies combine the matching method. • Instrumental variables It is possible to predict programme participation at the beginning; next one sees how the outcome indicator varies with respect to the predicted values. • Reflexive comparisons Baseline survey of participants before and after the intervention. This provides the comparison group and the impact is assessed by the change in outcome (before and after the intervention).

Source: Baker (2000).

Table 3.1 summarizes the quantitative methods of impact assessment including experimental and quasi-experimental designs. The latter consist of matching methods, difference in difference,

instrumental variables, and reflexive comparison (Baker, 2000). In addition, participatory and qualitative methods can be used to provide a broader interpretation of the quantitative results (Baker, 2000). However, the popular identification strategy to determine the impact of treatments or programmes where there is lack of experimental data is the difference in difference method (Athey & Imbens, 2006; Li et al., 2011b).

According to Ezemenari, Rudqvist, and Subbarao (1999), the critical factors in impact evaluation are:

1. Counterfactual identification in an impact evaluation study is important and will imply a good impact evaluation study.
2. Identifying the counterfactual is essential to clearly define control groups and possible variables that will impact programme outcomes.
3. Quantitative and qualitative methods provide good results for impact evaluation.

3.1.2 Previous studies of Islamic MFIs' impact on rural households

However, very few studies have attempted to measure the impact of Islamic MFIs on rural households. For example, Rahman (2010b) measured the impact of an Islamic micro-finance programme in Bangladesh on rural poverty alleviation. Rahman's study shows that, after joining the Rural Development Scheme (a *shari'a* micro-finance programme in Bangladesh), the family income of Islamic MFIs' clients increased over 33%; the clients' religious activities increased by around 21%; and the clients' business knowledge and communication skills increased by 72% and 79%, respectively. This implies that Islamic MFIs' financing has a positive impact on the clients' socio-economic status and helps to reduce poverty in rural areas (Rahman & Ahmad, 2010).

Rahman (2010b) used ordinary least squares (OLS) and logit regression to estimate the impact of the Islamic microfinance programme on various economic outcomes in Bangladesh. The logit model was used to predict the probability of increasing the welfare level of Islamic MFIs' clients. The study measured the improvement in economic welfare as well as moral and ethical principles. The author revealed that the Islamic microfinance programme improves clients' religious behaviour such as praying and fasting, and it increases household income, the productivity of crops and livestock, and expenditure.

Rahman (2010a) believed that moral and Islamic values in Islamic MFI schemes can effectively boost the motivation of micro-entrepreneurs to develop their business. The profit and loss sharing mechanism in Islamic MFIs is expected to remove the inequitable distribution of profits in business between the financial institution and its clients. Therefore, this mechanism ensures justice for the parties involved because the return to the financial institution is based on the profit generated by the entrepreneur (Rahman & Rahim, 2007). Islamic MFIs also use ethical processes to encourage clients

to keep up to date with their payments. Before implementing the Islamic MFI scheme and values in practice, Islamic MFIs have to ensure that their products agree with Islamic ethical principles. There are four basic tenets in Islamic finance ethical systems: (1) unity (*tawhid*[11]); (2) equilibrium (*al-adl wa'l ihsan*[12]); (3) free will (*Ikhtiyar*[13]); and (4) responsibility (*Fard*[14]) (Naqvi & Qadir, 1997) as cited in (Rahman, 2010a)).

Samer, Majid, Rizal, Muhamad, and Rashid (2015) study measures the impact of Malaysian microfinance, Amanah Ikhtiar Malaysia (AIM), on urban and rural household income. Their multinomial logit analysis reveals a positive impact of microfinance on household income, especially for women and older members. Financing from AIM also has a positive impact on poverty reduction, especially in rural areas. The authors' surveyed 780 women in two Malaysian states, Selangor and Melaka (rural and urban areas). There were four groups in their study, older members from urban Selangor and Melaka, new clients from urban areas, older members from rural Selangor and Melaka, and new clients from rural areas. The authors concluded that AIM financing has a positive impact on income, especially for women clients who spent three years in the financing scheme.

Finally, a study by Adnan and Ajija (2015) investigated the impact of Islamic MFIs on rural households in Indonesia (see Table 3.2). The authors focused on the effectiveness of Islamic MFIs in reducing poverty and their sample comprised clients from one Islamic MFI, namely BMT MMU Sidogiri, in East Java, Indonesia. Poverty measurement indicators such as the Headcount Index, the Gini Index, the Sen Index, and the Foster-Greer-Thorbecke Index were used to measure the impact of Islamic MFIs' financing. Their study concluded that most clients can increase their income after receiving financing from Islamic MFIs as income increased around 50% from IDR 1,097,700 to IDR 1,669,100. BMT MMU Sidogiri's financing in 2015 was able to reduce the number of respondents below the poverty line by 22.5 per cent, reduce the poverty gap ratio from 24 to 11.3 percent and reduced the severity of poverty from 0.187 to 0.079 (Adnan & Ajija, 2015; Riwajanti & Asutay, 2015).

[11] This axiom means that behaviour should be guided by ethical principles; it is a vertical dimension and a unifier for every individual as an integral part of all aspects of life.
[12] It means a horizontal dimension which requires balance and fairness in society. Every individual should maintain this ethical principle.
[13] It is the opportunity to make maximum efforts in all aspects of life. Every person also has the freedom to change himself/herself with changing times.
[14]Every person is required to be responsible, especially when it comes to public goods. It is also about the responsibility towards society.

Table 3.2 Summary of studies on the impact of Islamic MFIs.

Sources	Focus of Studies	Methods	Results
Rahman and Ahmad (2010)	Assessing the impact of rural development schemes (sharia-based microfinance program) on rural poor's livelihood in Bangladesh	• Descriptive statistics • OLS • Weighted least square • Linear programming • Simultaneous equation systems	• Household income, expenditure, productivity (crops and livestock), and employment had increased significantly • Clients' socio-economic factor had a positive and significant influence on household income
Adnan and Ajija (2015)	Investigating the impact of BMTs (Islamic MFIs) on rural households in Indonesia. Especially the role of Islamic MFIs in reducing poverty in Indonesia	• Poverty measurement indicators such as the Headcount Index, the Gini Index, the Sen Index and the Foster-Greer-Thorbecke Index, were used to measure the impact of Islamic MFIs' financing.	• Revealed that Islamic MFIs' financing is effective in reducing poverty • Most of the respondents were able increase their income after receiving financing
Samer et al. (2015)	Examining the role of Malaysian Microfinance, Amanah Ikhtiar Malaysia (AIM) on household income. AIM's loan is interest-free based on Islamic principles	• Multinomial logistic, survey 780 respondents in Selangor and Melaka, Malaysia	• AIM has a positive impact on household income especially on women borrowers who spent three years in the scheme as compared to the new borrowers

3.1.3 Previous studies of conventional MFIs' impact on rural households

There are ample studies that measure the impact of conventional MFIs on rural households. Pitt and Khandker (1998) estimated the impact of credit programmes in Bangladesh, such as the Grameen Bank, Bangladesh Rural Advancement Committee (BRAC) and the Bangladesh Rural Development Board's RD-12 program (BRDB), on changes in households behaviours (e.g., household expenditure, assets, schooling and labour supply). The study used a quasi-experimental design, with weighted exogenous sampling maximum likelihood - limited information maximum likelihood-fixed effects (WESML-LIML-FE) to minimize the bias from a non-random programme placement and self-selected participation. Using data from 87 rural villages in Bangladesh during 1991-1992, the study found that the credit programme in Bangladesh exhibited a positive and significant impact on women compared with men. The credit programme significantly influenced six households' behaviour (i.e., girls' schooling, boys' schooling, women's labour supply, men's labour supply, annual expenditure, and women's non-land assets).

Copestake, Bhalotra, and Johnson (2001) found that microcredit had a positive impact on business profit and household income. Borrowers experienced growth in their business profit and household income after receiving a second loan from the urban credit programme in Zambia. Microcredit also has an impact on the borrowers' quality of life and improved business performance; those who received a loan experienced more rapid diversification of their business than non-borrowers. However, Copestake et al. (2001) study showed that borrowers who left the programme after receiving their first loan were worse off in their quality of life.

The popular technique to measure the causal effect of programmes or treatments of conventional MFIs is called the difference-in-difference (DID) method and this technique was used by Li et al. (2011b) and Kondo et al. (2008). Li et al. (2011b) used household outcomes (annual income and consumption) as a welfare indicator to identify the impact of microcredit on rural households in China. The authors' study compared households' outcomes between participant and non-participant households to measure the true impact of the programme. The programme impact, denoted by Δ_i, can be measured by $Y_{i1} - Y_{i0}$ (Li et al., 2011b):

$$\Delta_i = Y_{i1} - Y_{i0} \qquad (3.1)$$

Li et al. (2011b) employed adjusted DID and a fixed effect technique to enhance their result estimates. Observable household characteristics were included as control variables while the fixed effect technique was adopted to control unmeasured household and village characteristics. Kondo et al. (2008) used several outcome variables such as: (1) household welfare (*per capita* income, expenditure, saving and food); (2) household employment and enterprises; (3) household assets such as farm equipment, land and livestock; (4) household education and health; and (5) household savings, to measure the impact of a microfinance programme on rural households in the Philippines. The impact of the microfinance programme based on the DID method is given as follows (Kondo et al., 2008):

Impact = (A-B) - (C-D) (3.2)

The term (A-B) demonstrates the microfinance impact and effects of unobserved characteristics affecting participation, (C-D) demonstrates the net effect of the unobserved characteristics affecting participation. Hence, (A-B) - (C-D) generates the net impact of the microfinance programme (Kondo et al., 2008).

The Li et al. (2011b) study revealed that a microcredit programme helps improve households' welfare especially income and consumption. Kondo et al. (2008) study revealed a positive impact of programme loans on households' income and expenditure. However, the authors also reported a

negative and insignificant impact of the loan programme for poorer households. The impact for poorer households was lower or negative is because: (1) the clients were concentrated among the poorer households and (2) the average size of loans for poorer households was smaller (see Table 3.3).

MFIs also significantly improve the health of children. DeLoach and Lamanna (2011) described how the health of children in Indonesia can be improved through the presence of MFIs in societies. First, they empower parents with social capital that leads them to access the knowledge related to health. Second, MFIs enable women's bargaining power in the family that leads to increased expenditure for children. Third, the presence of MFIs in society may lead to improvement in a society's facilities such as sanitation and healthcare which impact the health of children. Finally, MFIs help to smooth households' consumption in the case of a shock to their income or wealth (DeLoach & Lamanna, 2011).

Phan, Gan, Nartea, and Cohen (2014) used a propensity score matching (PSM) method to evaluate the impact of microcredit on rural households in the Mekong River Delta of Vietnam. The PSM results showed the Vietnam Bank for Social Policies' (VBSP) microcredit programme has a significant and positive impact on rural households' consumption. The authors' study also showed that the poorest group benefits more if the poor groups are included in the estimation, which implies that earlier groups receive more benefit from the programme than later groups (see Table 3.3). In addition, Phan et al. (2014) argued that the PSM method is an appropriate technique in microfinance impact assessment to control for bias due to observed factors. However, unmeasured characteristics and bias that occur from cross-sectional matching estimators could not be controlled in their study. Therefore, they recommend employing the fixed effect model with panel data if the data is accessible (Phan et al., 2014).

Table 3.3 Summary of studies on the impact of conventional MFIs.

Sources	Focus of Studies	Methods	Results
Pitt and Khandker (1998)	Evaluating the impact of participation in three credit programmes (Grameen Bank, BRAC, and BRDB) on household expenditure, assets, schooling and labour supply in Bangladesh	• Quasi-experimental design; • WESML-LIML-FE; • Instrumental variables	• The credit programme in Bangladesh exhibits a positive and significant impact on poor households' behaviour, especially for women
Copestake et al. (2001)	Assessing the impact of the Peri-Urban Lusaka Small Enterprise Project (PULSE) a group based microcredit programme in Lusaka, Zambia	• Survey; • Focus group discussions; • Interview; • Regression analysis; • Multiple regression	• Positive and significant impacts on household income and business • Improved borrowers' quality of life and business performance • Borrowers experienced rapid diversification of their business
Kondo et al. (2008)	Investigating the impact of microfinance on rural households in the Philippines	• DID	• Positive and significant impacts of microfinance on households' income and expenditure • Negative and insignificant impacts for poorer households
Li et al. (2011b)	Empirically evaluating the impact of microcredit on household welfare (income and consumption) in rural China	• DID; • Fixed effect regression	• Microcredit programme helps to increase household income and consumption • Borrowers involved more in the microcredit programme gain more benefits
DeLoach and Lamanna (2011)	Investigating the impact of microfinance on child health in Indonesia using data from an Indonesian Family Life Survey (IFLS)	• Generalized method of moments	• The presence of MFIs in communities helps to improve the health of children

Sources	Focus of Studies	Methods	Results
Phan et al. (2014)	Evaluating the impact of microcredit on rural households in the Mekong River Delta of Vietnam	• Propensity score matching method	• Microcredit programmes have a positive and significant effect on rural household consumption. • The poorest group received more benefits from the microcredit programme

3.2 The values and schemes of Islamic MFIs

3.2.1 Theory of Islamic MFIs' schemes

The important value of Islamic finance is the commitment to avoid the practice of usury or *riba*[15] in transactions (Dhumale & Sapcanin, 1999). *Riba* is prohibited in Islam and taking profit from lending money is considered as *haram* (forbidden) (Chapra, 2006; Dhumale & Sapcanin, 1999; El-Komi & Croson, 2013). In the first stage of Islamic finance development there was some debate whether *riba* relates to interest or to excessive interest. However, Islamic scholars reached a consensus that all forms of interest are prohibited (Hassan & Lewis, 2004).

In *shari'a*, *riba* refers to the excess that is obliged to be paid as a condition of a loan or for a postponement from its maturity from the borrower to the lender (Chapra, 2006). Explained differently, *riba* is the prearranged return for the use of money. There are two forms of *riba* in Islam. They are *riba al-fadl* and *riba al-nasi'ah*. *Riba al-fadl* is associated with unequal qualities or quantities that occur from the exchange of the *ribawi*[16] goods concurrently. *Riba al-nasi'ah* is associated with a postponement; it occurs when two *ribawi* goods are exchanged in different ways (one promptly and the other postponed). *Riba al-nasi'ah* can be also associated with usury on a loan arising from the component of time or, namely, a loan with interest. It occurs where a borrower enters a loan contract in which he/she has to repay a predetermined amount of money based on the principal (Aichbichler, 2009; Chapra, 2006; Paldi, 2014).

Most conventional MFIs' products do not fulfil the needs of Muslim clients. Many Muslims prefer products from Islamic MFIs rather than conventional MFIs because conventional MFIs' products contravene their religious beliefs (Akhter et al., 2009). The practice of Islamic finance emphasises a

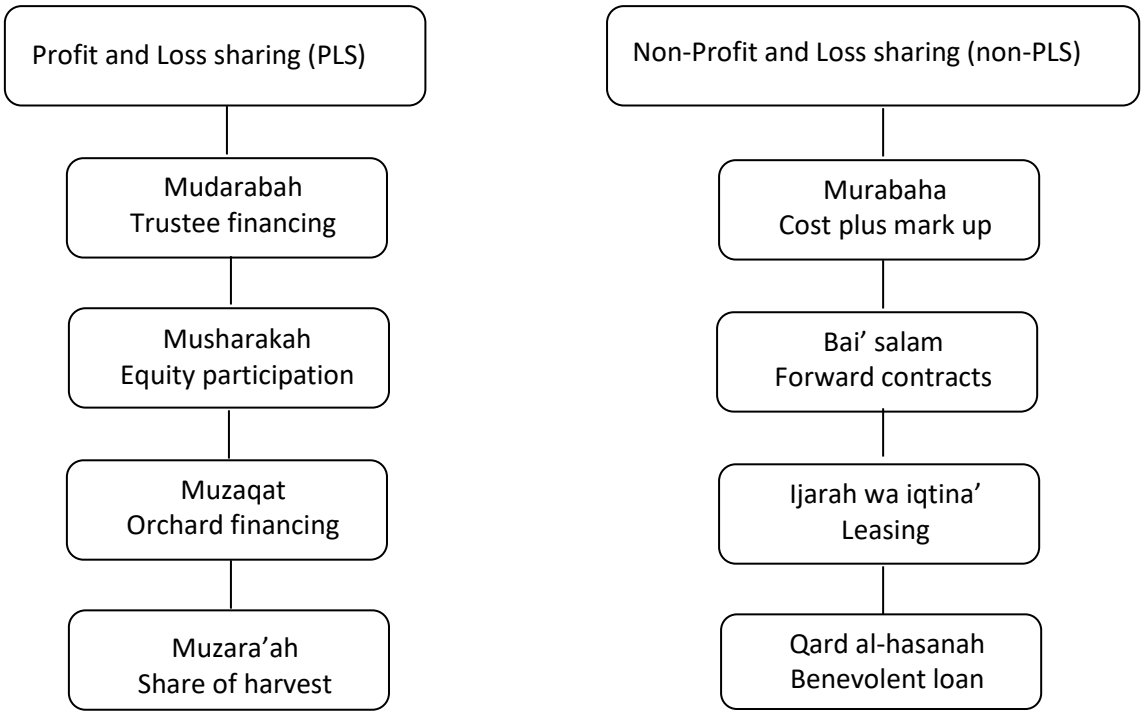
[15] *Riba* is translated as any excess which is aDIDed into the loan. It is also known as interest and can be found in conventional financing or lending schemes. The aDIDitional amount, predetermined before the transaction, is called *riba* (Dhumale & Sapcanin, 1999).
[16] The *ribawi* goods are dates, wheat, barley, salt, gold, and silver (Paldi, 2014)

profit and risk sharing mechanism. For instance, Islamic MFIs' products such as *mudarabah*[17], *musharakah*[18], *muzara'ah*[19], and *muzaqat*[20] are more concerned with cooperation between funders and entrepreneurs.

The profit and loss sharing (PLS) mechanism is a contractual agreement between two or more parties where the parties share their resources in a project and generate their return based on a pre-agreed ratio (Abdul-Rahman, Latif, Muda, & Abdullah, 2014; Akhter et al., 2009; Dhumale & Sapcanin, 1999). Abdul-Rahman et al. (2014) investigated why a non-PLS mechanism is favoured in Islamic banks in Malaysia. The data showed that PLS financing comprises less than 3% of the total financing of Malaysian Islamic banks. Using New Institutional Economic Theory, Abdul-Rahman et al. (2014) found that the PLS mechanism suits Islamic banks that play the role of genuine entrepreneurs rather than financial intermediaries.

According to Chowdhry (2006), Islamic finance may be able to provide a good mechanism to empower the poor and can convert potential capital into profit with the PLS mechanism. This is because under the PLS mechanism, such as *mudarabah* and *musharakah*, every client (entrepreneur) will not experience an interest burden at the beginning of the project. Both parties will have an agreement on the profit and loss sharing ratio and the return will be based on the business outcome (Abdul-Rahman et al., 2014).

[17] Under a *mudarabah* contract, one party provides all the capital needed while the entrepreneurs give their effort and time to the project. The profits are shared in a fixed ratio and losses are borne by the financial institution (Dhumale & Sapcanin, 1999).
[18] Under a *musharakah* contract, two or more parties contribute their equity to a project and profits are shared based on an agreement, whereas losses are shared based on equity participation. It is similar to a joint venture agreement (Chong & Liu, 2009; Dhumale & Sapcanin, 1999).
[19] *Muzara'ah* is a *mudarabah* contract in the agricultural sector; one party provides the land or funds and the other party contributes his/her effort. Both parties share the harvest based on the agreement (Dhumale & Sapcanin, 1999).
[20] *Muzaqat* is a *musharakah* contract in the orchard sector where the harvest is shared based on equity participation (Dhumale & Sapcanin, 1999).



Source: Iqbal and Mirakhor (1987); Kazarian (1993) as cited in (Dhumale & Sapcanin, 1999); (Obaidullah & Khan, 2008).

Figure 3.2 Types of Islamic finance contracts.

Figure 3.2 shows two main contracts under Islamic finance: profit and loss sharing (PLS) and non profit and loss sharing (non-PLS). PLS contracts are riskier than non-PLS contracts because of the possibility of asymmetric information that may occur in these contracts (e.g., *musharakah* and *mudarabah*). However, there are opportunities to implement the PLS mechanism in rural areas because of the honesty of rural communities (Dhumale & Sapcanin, 1999; Shahinpoor, 2009). Based on Shahinpoor (2009), there are several reasons why PLS can be more successful in rural areas: (1) measuring the profit of agricultural projects is relatively easy; (2) in rural areas, the problem of moral hazard is highly unlikely because it is community based and the degree of privacy is very limited; and (3) to some extent, people in rural areas are less likely to cheat because everybody in the village knows what others are doing and usually monitor each other.

Non-PLS contracts include *murabaha*[21], *bai' salam*[22], *ijarah wa iqtina'*[23] and *qard al-hasanah*[24]. *Murabaha*, for instance, can be used to purchase and resell commodities in rural areas (Wilson, 2007). *Ijarah wa iqtina'* can be applied to the lease of equipment or fields to a rural client. *Bai' salam* is appropriate for farmers and traders in agricultural areas. Finally, *qard al-hasanah* is suitable for new entrepreneurs to start their business (Obaidullah, 2008; Rahman & Rahim, 2007; Wilson, 2007).

3.2.2 Indonesia National *Shari'a* Board

The National *Shari'a* Board or Dewan Syariah Nasional (DSN) is an institution founded in February 1999 by the Indonesian Ulema Council or Majelis Ulama Indonesia (MUI) with the main aim of managing issues relating to the development of Islamic financial institutions (IFIs) in Indonesia. The three main duties of the DSN are (DSN MUI, 2013):

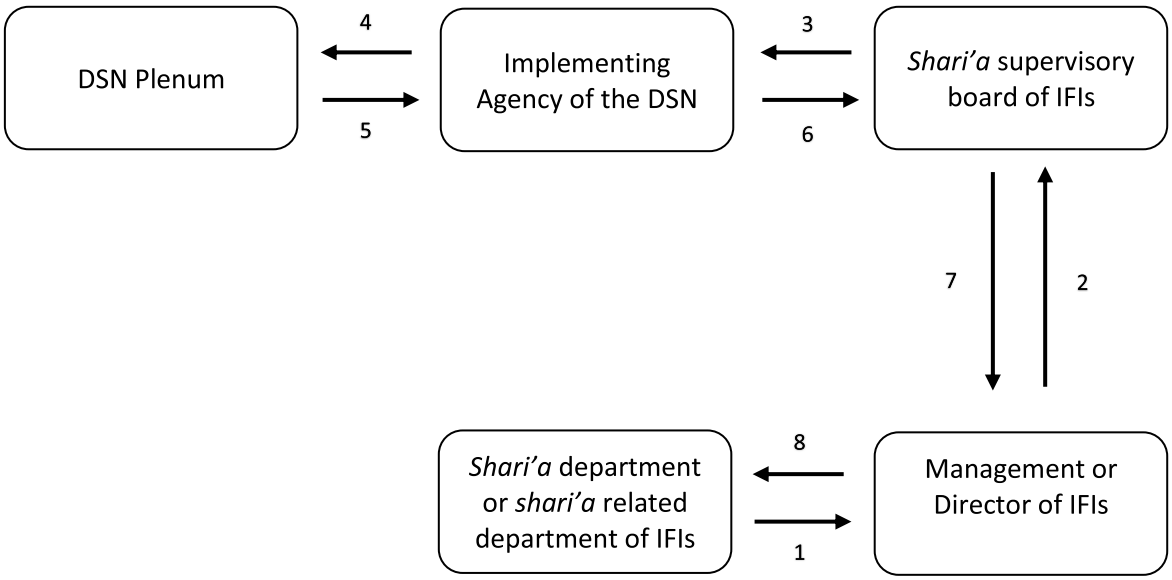
1. Issuing a fatwa[25] of the Islamic economy to be a reference or guidance for practitioners and regulators.
2. Providing recommendations, certification and *shari'a* approval for IFIs.
3. Performing monitoring and evaluation of *shari'a* compliance implementation in IFIs through a *shari'a* supervisory board (SSB) attached to each IFI.

DSN-MUI is an independent institution and fatwas issued by DSN are not binding on IFIs (Hadi, 2011). However, based on Indonesian Constitution No. 21, 2008 about Islamic banking regulations, the fatwas could be implement by the central bank of Indonesia and become a regulation or Peraturan Bank Indonesia (PBI) which will legally bind IFIs (Hadi, 2011). From 2000 to March 2017, DSN has issued about 107 fatwas on Islamic financial products in Indonesia (DSN MUI, 2013). There are four focus area in DSN which are: (1) Islamic banks; (2) Islamic capital markets; (3) Islamic financial institution non-banks and (4) Islamic businesses and tourism. IFIs have to follow certain mechanisms

[21]*Murabahah* is a scheme usually used for short-term financing. Under this scheme, the seller discloses the real cost and profit of the products to the buyer. Negotiation of a profit margin is possible and instalment payments are common (Dhumale & Sapcanin, 1999; Obaidullah, 2008).
[22]*Bai' salam* is a scheme similar to forward contracts. Under this scheme, the seller and the buyer agree to the future transaction where the buyer pays the full amount of the price and the seller promises to deliver the goods. Quality, quantity, price, and time of delivery are determined at the time of the contract (Dhumale & Sapcanin, 1999).
[23]*Ijarah wa iqtina'* is a lease transaction consisting of *ijarah* (pure leasing) and *Ijarah wa iqtina'* (lease and purchase). In a lease and purchase scheme, a portion of each regular payment is applied to the purchase of the goods where the goods are transferred to the buyer at the end of a period (Dhumale & Sapcanin, 1999; Obaidullah, 2008).
[24]*Qard al hasanah* is the only loan permissible under Islamic finance concepts. This scheme is a zero return loan. However, administration and transaction costs are permissible (so long as there is no relationship with the maturity and amount of the loan) (Dhumale & Sapcanin, 1999).
[25] Fatwa is an Islamic legal statement, issued by an expert in religious law (mufti) referring to a specific issue (Kabbani, 2017).

if they want to get approval or a fatwa from the DSN with regard to their products and services. Figure 3.3 shows the fatwa issuing mechanism from the DSN which can be explained as follows:

1. The *shari'a* or relevant department in an IFI submits a proposal for new products and services or the innovation of prior products and services to the management or board of directors.
2. The proposal is reviewed and discussed by the top management of IFIs and is then forwarded to the particular SSB assigned for that IFI.
3. The SSB, board of directors, and the relevant department meet and discuss the proposal. The proposal is then sent to the implementing agency of the DSN.
4. The implementing agency of the DSN receives the proposal from the SSB and brings it to the DSN meeting or DSN plenum.
5. The DSN provides an answer or fatwa to the IFI through the DSN implementing agency.
6. The DSN implementing agency then forwards it to the IFI's SSB.
7. The SSB then forwards the answer or fatwa to the board of directors.
8. The board of directors then assigns the relevant department to implement or not implement the proposal based on the answer or fatwa from the DSN.



Source: Hadi (2011).

Figure 3.3 Fatwa issuing mechanism in DSN.

The role of the DSN is crucial because all IFIs in Indonesia have to follow fatwas issued by it. All IFIs are also monitored and supervised by an SSB assigned by the DSN (Hadi, 2011). There are similar

institutions to the DSN in other countries. For instance, Malaysia has the *Shariah* Advisory Council (SAC), which was established in May 1997 and acts as the highest *shari'a* authority on Islamic finance in Malaysia (Bank Negara Malaysia, 2016). Pakistan has a *shari'a* board that is attached to the State Bank of Pakistan (central bank of Pakistan); the board has five members consisting of two Islamic scholars, an accountant, banker and jurist (Hadi, 2011; State Bank of Pakistan, 2016).

3.2.3 Previous studies of *shari'a* compliance and Islamic values

Previous studies on *shari'a* compliance and evaluation of Islamic values are limited. Vinnicombe (2010) evaluated the *shari'a* compliance of several Islamic banks in Bahrain (nine wholesale banks and six retail banks) from 2004 to 2007 based on the *shari'a* standard from AAOIFI. The study constructed an index based on a survey from relevant literature (e.g., annual reports) to identify the level of *shari'a* compliance of some schemes in Islamic banks (e.g., *murabahah*, *mudarabah*, and *zakah*) plus the *shari'a* supervisory board's report. The study revealed that *murabahah* exhibited a higher degree of *shari'a* compliance than the two other schemes (*mudarabah* and *zakah*) (see Table 3.4). One reason is because the *murabahah* scheme is less complicated than the *mudarabah* scheme (Vinnicombe, 2010).

Rahman and Ahmad (2010) study attempted to identify the relationship between clients' moral and Islamic values and changes in their income. Using a Likert-scale and OLS regression, the authors found that morals and Islamic values make a positive and significant contribution to clients' income (see Table 3.4). This implies that clients with good morals experience a higher probability of an increase in income. The authors' sample covered over 1,000 clients of Islamic microfinance programmes in Bangladesh (Rahman & Ahmad, 2010).

Mollaha and Zaman (2015) investigated the impact of the *shari'a* supervision board on Islamic banks' performance. The authors' study included 86 Islamic banks and covered 25 countries over seven years (2005-2011). Adopting a random-effect GLS estimation, the study found that a *shari'a* supervision board that applies its supervisory role contributes a positive and significant impact to Islamic banks' performance (see Table 3.4). The banks' performance indicators[26] include ROIAE, ROIAA, ROAE, and ROAA (Mollaha & Zaman, 2015).

[26] ROIAE = operating profit divided by average equity; ROIAA = operating profit divided by total assets; ROAE = net income divided by average total assets; ROAA = net income divided by average total assets. ROIE, ROIAA, and ROAE measure operating efficiency while ROAA measures return on average assets (Mollaha & Zaman, 2015).

Table 3.4 Summary of studies on *shari'a* compliance and Islamic values.

Sources	Focus of Studies	Methods	Results
Vinnicombe (2010)	Examining *shari'a* compliance of an Islamic bank in Bahrain based on AAOIFI standards	• Benchmark index • Survey of literature	• *Murabahah* encounters a high degree of *shari'a* compliance • *Mudarabah* and *Zakah* have low degrees of *shari'a* compliance
Rahman and Ahmad (2010)	Evaluating the link between clients' moral and Islamic values and changes in income	• Likert-scale • OLS	• Moral and Islamic values exhibit a positive and significant relationship with clients' income
Mollaha and Zaman (2015)	Investigating the impact of the *shari'a* supervision board on Islamic banks' performance	• Random-effect GLS	• *A shari'a* supervision board that implements its supervisory role exhibits a positive and significant impact on bank performance

Maintaining *shari'a* compliance is important for any Islamic financial institution (IFI), including Islamic MFIs. Besides the *shari'a* standard, there are also standards from international organisations such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI)[27] and, in Indonesia, there is a *shari'a* board for each IFI. The board's function is to monitor and evaluate the *shari'a* compliance of the institution. This board is evaluated and monitored by the National *Shari'a* Board of Indonesia[28]. This current study examines the *shari'a* compliance of Islamic MFIs' schemes in Indonesia based on the standards from the National *Shari'a* Board of Indonesia.

Investigating clients' Islamic values is also important to have better knowledge about clients' understanding of Islamic finance. Moreover, a study of clients' Islamic values will also identify the clients' perceptions about the financing that they receive. This current study investigates the Islamic values of Islamic MFIs' clients based on 10 statements, including the relationship of clients' spiritual beliefs and financial decisions; the implementation of their religious beliefs; opinions on *shari'a* compliance; and the clients' financing experience.

3.3 Measuring the impact of Islamic financing mechanism

3.3.1 Overview of financing mechanisms available in Islamic finance

Based on the literature, there are two main mechanisms/models of contract in Islamic finance, PLS and non-PLS mechanisms. However, there are few studies that discuss these two models in Islamic MFs with regard to the impact on rural households' welfare.

According to Aggarwal and Yousef (2000), Dusuki and Abdullah (2006) and Asutay (2007), the common model of financing in Islamic financial institutions (IFIs) is the non-PLS model, especially

[27]http://aaoifi.com/en/about-aaoifi/about-aaoifi.html
[28]http://mui.or.id/mui/category/tentang-mui/lembaga/dewan-syariah-nasional

debt-like instruments (e.g., *murabaha* and *ijarah wa iqtina'*). There is a debate among scholars about which is the better model, PLS or non-PLS. According to Dusuki and Abdullah (2006), the ideal model for an IFI is a PLS mechanism. This is because PLS represents the true spirit of the Islamic finance concept, which differs significantly from the conventional or interest based system (Dusuki & Abdullah, 2006). Dusuki and Abdullah (2006) argue that if a PLS mechanism is implemented in the asset and liabilities sides of IFIs (e.g., the Islamic banking system), this implies that the depositors are sharing the risk with the IFI. Therefore, depositors will absorb any outcome from the asset side of the IFI. The depositors' funds will reflect the real asset value of the IFI.

Asutay (2007) argues that PLS mechanisms are the solution to achieve justice and equality and meet not only the *maqasid al-shari'a* (objective of *shari'a*), but also the objectives of Islam. PLS mechanisms are also important in distinguishing Islamic from conventional financial institutions because in these mechanisms both parties share the profit and loss based on a pre-agreed ratio instead of a fixed return; it is a unique feature of and the attractiveness of Islamic finance (Azmat et al., 2015; Chong & Liu, 2009; Ibrahim & Mirakhor, 2014).

However, Farooq (2007) listed some reasons why IFIs tend to avoid PLS and use non-PLS mechanisms overwhelmingly. Farooq's study reveals that: (1) PLS mechanisms are vulnerable to the agency problem because clients have disincentives to put in effort and incentives to report less profit; (2) IFIs have to offer a relatively less risky mode of financing, such as the non-PLS mechanism, because they have to compete with conventional financial institutions that are already established and hence competitive; and (3) PLS mechanisms are not appropriate to fund short-term projects because of their high degree of risk, hence IFIs rely heavily on non-PLS mechanisms.

There are several reasons why PLS mechanisms are less popular with or more difficult to adopt by IFIs. Based on a study by Paul and Presley (1999) as cited in Chong and Liu (2009), the first reason is the moral hazard problem associated with the *ex-post* information asymmetry, which is more likely to occur in this mechanism. The entrepreneur (the one who receives the financing) has an incentive to manipulate adversely the reported profit that may adverse investor. Second, the moral hazard problem can also occur in a *mudarabah* (profit sharing) contract because the entrepreneur can potentially aggressively undertake high-risk projects whereby they gain relatively higher profit and bear no losses (Chong & Liu, 2009).

3.3.2 Studies on Islamic financing mechanisms

According to a study by Aggarwal and Yousef (2000), most Islamic banks adopt a non-PLS financing mechanism in their operations. The study evaluated financing data from three Islamic banks (Egypt's Faisal Islamic Bank, Jordan's Islamic bank and Bank Islam Malaysia) and one country, Iran (the

banking system is Islamic). The study indicated that non-PLS financing is dominant (*murabahah* and *ijarah*). Using the model of capital structure and investment placed in incomplete contracts, the authors found that it is normal for Islamic banks to avoid the PLS financing mechanism (see Table 3.5). This is because Islamic banks could encounter agency problems and adverse selection that lead to moral hazard behaviour. Therefore, given the current economic situation, it is customary for Islamic banks to combine PLS and non-PLS mechanisms in their financing portfolios, even if they should emphasise the PLS financing mechanism (Aggarwal & Yousef, 2000).

Dusuki and Abdullah (2006) study emphasised the perspectives of Islamic banks' stakeholders towards the practice of Islamic banks in Malaysia. The study conducted a survey of 1,500 respondents including depositors, customers, regulators, managers, *shari'a* advisors, employees, and local communities. The study covered four areas in Malaysia: Kuala Lumpur, Penang, Johor, and Kelantan. Using descriptive statistics from the survey data, the results show that most respondents highly appreciate Islamic banks' unique characteristics compared with conventional banks. Secondly, as a bank with unique products and services, Islamic banks should promote the PLS financing mechanism to differentiate them from conventional banks (Dusuki & Abdullah, 2006).

Farooq (2007) study provides several reasons why IFIs tend to avoid PLS mechanisms in their business. By analysing arguments from Islamic scholars, the author concluded that the agency problem, high business risk, unavailability of a secondary market, and taxation issues are some reasons why IFIs avoid PLS systems. These reasons encourage IFIs to mimic conventional financial institutions' products in their operations (Farooq, 2007).

Chong and Liu (2009) showed that products and services from Islamic bank are not much different from conventional banks, especially for deposit products. Islamic banks rely heavily on non-PLS mechanisms. Data for the authors' study included a series of Islamic banks' investment rates and conventional bank deposit rates (monthly data) in Malaysia, published by Bank Negara Malaysia from 1995 to 2004. Using the Engle-Granger error correction method, the authors discovered that a shift in conventional bank deposit rates will lead to a shift in Islamic banks' investment rates (PLS) and, in the long term, Islamic rates are highly correlated with conventional rates (see Table 3.5). Hence, the authors concluded that Islamic bank deposit rates follow the conventional deposit rates (Chong & Liu, 2009).

Sumarti et al. (2014) developed a mathematical model of the PLS mechanism. The authors' study used a model based on simulation data from low income traders in Indonesia. The results showed that the PLS mechanism combined with microcredit benefits not only the traders (borrowers) but also the investors. The rate of return for investors ranged from 17.7% to 23.1% per month and for borrowers it ranged from 54.98% to 91.98% per loan period. The borrowers obtain a better return if

they borrow money with a PLS mechanism than if they borrow money with interest (Sumarti et al., 2014).

Azmat et al. (2015) argued that financing contracts with Islamic banks are supposed to be dominated by the PLS mechanism which is considered to be more "Islamic". The study constructed models such as the asymmetric information and moral hazard model to explain why the PLS financing mechanism is not popular. The models include asymmetric information, long-term contracts and legal punishment, and risk averse bank depositors that affect and are related to the PLS financing mechanism. The authors proposed that the PLS financing mechanism is more suitable for venture capital or private equity than for Islamic banks (Azmat et al., 2015).

Table 3.5 Summary of Islamic financing mechanism studies.

Sources	Focus of Studies	Methods	Results
Aggarwal and Yousef (2000)	Financial instruments used by Islamic banks (between PLS and non-PLS)	• Descriptive statistics (data from International Association of Islamic Banks and annual reports) • Investment and capital structure model based on incomplete contracts (this model is modified from Hart and Moore (1997) Bolton and Scharfstein (1990))	• Most IBs rely heavily on non-profit and loss sharing (non-PLS) financing mechanisms • The agency problem in PLS decreases the optimality of this mechanism followed by domination of debt-based contracts (non-PLS); • The moral hazard problem leads to non-PLS financing (debt-like instrument) in IBs
Dusuki and Abdullah (2006)	Perceptions of Islamic banks' stakeholders on Islamic banks' practice in Malaysia including implementation of financing mechanisms	• Likert-scale • Survey	• Islamic banks (IBs) should balance profit-orientation and social-welfare commitment • Financial products and services should be *shari'a* compliant and IBs should emphasise the PLS financing mechanism more
Farooq (2007)	Arguments and rationale for why IFIs avoid PLS mechanisms	• Theoretical study (describing arguments from Islamic scholars about PLS mechanisms)	• Avoiding PLS financing mechanisms is normal and rational behaviour of individuals or

Sources	Focus of Studies	Methods	Results
			business organizations
Chong and Liu (2009)	Comparative study between Islamic and conventional banks especially on deposit rates issues	• The Engle-Granger error correction method was used to study the long-term and short-term dynamics between Islamic investment rates and conventional deposit rates	• Rapid growth in IBs is more likely because of Islam rejuvenation worldwide rather than the uniqueness of PLS mechanisms in IBs • Changes in conventional deposit rates cause Islamic investment (PLS mechanism) rates to change, but not vice versa • Islamic deposits, in practice, are not very different from conventional deposits
Sumarti et al. (2014)	Mathematical model to find an optimal portion of profit share from PLS mechanisms in microcredit based on real financing data	• Mathematical model for PLS schemes • Moral hazard model in PLS financing	• Average rate of return for the PLS investments is around 17.7%-23.1% • Borrowers and lenders benefit from PLS schemes
Azmat et al. (2015)	Attempted to explain why debt-based contract (non-PLS) is dominant in IBs. Focused on asymmetric information, moral hazard, and adverse selection issues	• Asymmetric information model for PLS financing • Moral hazard model in PLS financing; • Long-term relationships and legal punishment model • Risk averse bank depositors model	• Borrowers can get higher profit through non-PLS mechanisms, this is why non-PLS dominates in IBs • Presence of asymmetric information alone cannot explain the absence of PLS mechanisms in IBs • Changes in depositors' attitudes might influence the increase of PLS financing schemes in IBs

In summary, based on the above studies, no study has specifically evaluated the impact of the two financing mechanisms. To date no empirical study has investigated which financing mechanism has the greater impact on the clients' (borrowers') welfare. This study aims to fill this gap in the literature with an empirical assessment of the impact of the two Islamic MFIs financing mechanisms (PLS and non-PLS) on rural household welfare in Indonesia.

3.4 Determinants factors influencing rural households to become clients of Islamic MFIs

3.4.1 Discrete choice theory

Discrete choice theory is used to evaluate the factors that influence access to microcredit. Discrete choice models are formulated under the utility-maximizing assumption made by the decision maker (Ben-Akiva & Lerman, 1985; Train, 2009). There are three characteristics of the choice set that can be categorized under the discrete choice framework (Train, 2009):

1. The options, or alternatives, must be mutually exclusive, which means that the decision maker decides to select one choice while the other options are not selected.
2. The choice set should be extensive, which means it includes all available options.
3. The options should be limited or finite

Ben-Akiva and Lerman (1985) argued that it is almost impossible to calculate a discrete choice model that consistently succeeds in predicting the chosen options, thus the concept adopted is random utility, which means the true utilities of the options are considered random variables. Therefore, the probability that an option is chosen is defined as the probability that it has the greatest utility among the available options (Ben-Akiva & Lerman, 1985).

According to Train (2009), the commonly used discrete choice model is logit. This is because logit has a similar formula to the choice probabilities and is easily explainable (Train, 2009). According to Train (2009), the power and limitation of logit are defined as:

1. The systematic taste variation can be defined by logit, especially taste variation associated with the decision maker's observed characteristics.
2. Logit models give proportional substitution over options. However, other models are needed to capture more flexible forms of substitution.
3. Logit can capture the dynamic of repeated choice; this includes state dependence. However, the logit model cannot control conditions when unobserved factors are correlated over time.

The logit formula was initially derived by Luce (1959) from the adoption of choice probabilities (Train, 2009). The most commonly used models for identifying the accessibility of credit are the binary logit and probit (Dzadze, Aidoo, & Nurah, 2012; Li et al., 2011a). The two models give efficient, consistent and asymptotically normal estimates as well as similar results in empirical work (Li et al., 2011a). According to Ben-Akiva and Lerman (1985), the binary logit model is more convenient analytically than the binary probit. Moreover, the binary logit model develops from the assumption that $\varepsilon_n = \varepsilon_{jn} - \varepsilon_{in}$ [29] is logistically distributed compared with the binary probit model which assumes a normal distribution (Ben-Akiva & Lerman, 1985; Li, 2010).

3.4.2 Previous studies on factors that influence access to microfinance

Vaessen (2001) examined factors that influenced rural households to receive credit from the Fondo de Desarrollo Local, a rural bank in Northern Nicaragua. The author used logistic regression and the findings showed that a network of information and the recommendations of bank staff are the main factors that influence access to credit. Education, household size, and engaging in agriculture and livestock are also factors that determine households' likelihood to become clients and receive credit from the bank. However, engagement in wage labour activity reduces the chance of receiving a loan. In addition, the availability of informal credit decreases rural households' demand for credit (Vaessen, 2001).

Okurut (2006) divides the accessibility to finance for poor and black people into three types of financial institution: formal, semi-formal, and informal. Using a multinomial logit and Heckman's probit model, the study used household survey data (1995 and 2000) to ascertain that household age, gender (male), size, education, expenditure, and race are factors that significantly influence rural households' access to formal financial institutions. Household size, expenditure, location and race are factors that affect the accessibility to semi-formal financial institutions. For informal financial institutions, only location influences the accessibility to credit for poor and black people (Okurut, 2006).

Umoh (2006) investigated the factors that influence microenterprises to participate in microcredit in Nigeria. Probit and regression analysis were used to analyse factors that influenced the demand for microcredit. Company type and total sales were two factors that increased demand for microcredit (see Table 3.6). Meanwhile, the businessman's income level and the initial capital of the enterprises are factors that decrease the demand for microcredit. Interest rate and certain requirements such as

[29] ε_{in} and ε_{jn} are the random parts from the utility of i and j, and are called the disturbances (Ben-Akiva & Lerman, 1985). Li (2010) study considered it as the probability of credit access.

collateral and minimum balance, are factors that decrease the amount of loans disbursed by microcredit institutions (Umoh, 2006).

Li et al. (2011a) argued that income, official status and self-employment of rural households are the main factors that influence access to microcredit. However, assets, savings and size of household reduce the possibility of accessing microcredit. The authors used logistic regression based on 424 respondents comprising 328 borrowers and 96 non-borrowers. The aim of the study was to evaluate the accessibility of microcredit to rural households in China (Li et al., 2011a).

Dzadze et al. (2012) evaluated factors that influenced farmers' access to credit in Ghana. The study used primary and secondary data from 100 farmers and five lending institutions. It evaluated 11 variables using logistic regression and found that three variables had a positive and significant influence on farmers' accessibility to formal credit institutions in Ghana. Farmers' savings accounts, extension contacts, and education influenced farmers' credit accessibility. Thus, the authors suggest that to enhance credit accessibility for farmers, the government should improve the farmers' extension contacts through regular visits, improve farmers' education levels, and assist farmers to save with banks (Dzadze et al., 2012).

Khoi, Gan, Nartea, and Cohen (2013) identified factors that determined the accessibility of microcredit in rural areas in Vietnam. Using the logit and probit models, the authors' study interviewed 928 rural households comprising 619 borrowers and 309 non-borrowers. Their results show that rural households with local government employees, members of a credit group, and those having a poor certificate have a high probability of receiving credit from formal microcredit programmes (see Table 3.6). Land holding status, loan purposes, interest, duration, and road access are factors that influence rural households in obtaining credit from informal microcredit programmes. Rural households that participate in informal credit have a higher chance of obtaining formal credit (Khoi et al., 2013).

Table 3.6 Summary of studies on the determining factors in accessing microfinance.

Sources	Focus of Studies	Methods	Results
Vaessen (2001)	Analyses factors that influence rural households to become clients and access credit from a rural bank in Northern Nicaragua	• Logistic regression	• Network and recommendations are important factors that influence rural households to access credit from the rural bank • Education, household size, and participating in agriculture and livestock farming are also important factors influencing rural households to become clients • Participation in wage labour activities reduces households' qualifications to receive a loan from the rural bank • The availability of informal credit decreases rural households' demand for credit from the rural bank
Okurut (2006)	Investigates factors that influence poor and black people's access to financial institutions (formal, semi-formal, and informal) in South Africa	• Multinomial logit model • Heckman's probit model	• Age, gender (male), household size, education, expenditure, and race significantly influence access to formal financial institutions • Household size, expenditure, location and race (being coloured) significantly influence access to semi-formal financial institutions • Location significantly influences access to informal financial institutions
Umoh (2006)	Examines factors that influence microenterprises to engage with microcredit in Nigeria	• Probit and regression analyses	• Type of firm and total sales increase the demand for microcredit • Level of income and the initial capital of enterprises are factors that decrease the demand for microcredit • Interest rate and requirements (collateral and minimum balance) by the microcredit institutions decrease the amount of loans disbursed by microcredit institutions
Li et al. (2011a)	Evaluates factors that affect rural households' accessibility to microcredit in China	• Logit model	• Income, official status, and self-employment are three main factors that influence households access to microcredit • Assets, savings and household size decrease the possibility to access microcredit

Sources	Focus of Studies	Methods	Results
Dzadze et al. (2012)	Identify factors that determine farmers' access to formal credit in Ghana	• Binary logistic regression	• Education, extension contacts, and savings accounts significantly influence the access to formal credit
Khoi et al. (2013)	Evaluates factors that determine rural households' access to microcredit in Vietnam	• Logit and probit model	• Local government staff, credit group membership, and having a poor certificate influence rural households in obtaining formal credit • Land holding status, loan purposes, interest, duration and road access to the rural households' village influence rural households in obtaining informal credit • Rural households involved in informal credit have a higher probability of obtaining formal credit

3.5 Chapter summary

Identifying the impact of financing from Islamic MFIs on rural household welfare helps to improve the quality of poverty eradication programs, especially for a developing country like Indonesia. In addition, micro financing with *shari'a* compliance which can cover rural areas is important to reach financial inclusion in Indonesia. Further, the investigation of the impact of the two financing mechanisms in Islamic MFIs will help to determine which type of financing has a better impact on rural households' welfare. Identifying factors that determine how rural households in Indonesia become clients of Islamic MFIs will help to enhance their accessibility.

Previous empirical studies have shown positive and significant impacts of microfinance on rural household welfare, especially changes in income and consumption. However, very few empirical studies have focused on investigating the impact of Islamic MFIs. Further, limited empirical studies provide evidence to identify the two financing mechanisms in Islamic MFIs. There are two main contributions from our study to the existing Islamic finance literature. First, it empirically estimates the impact of financing from Islamic MFIs in Indonesia with econometric evaluation (i.e. the difference in difference and fixed effect models). Second, our study will investigate the impact of the two financing mechanisms on Islamic MFIs (PLS and non-PLS) and identify which financing has a better impact on rural household welfare in Indonesia.

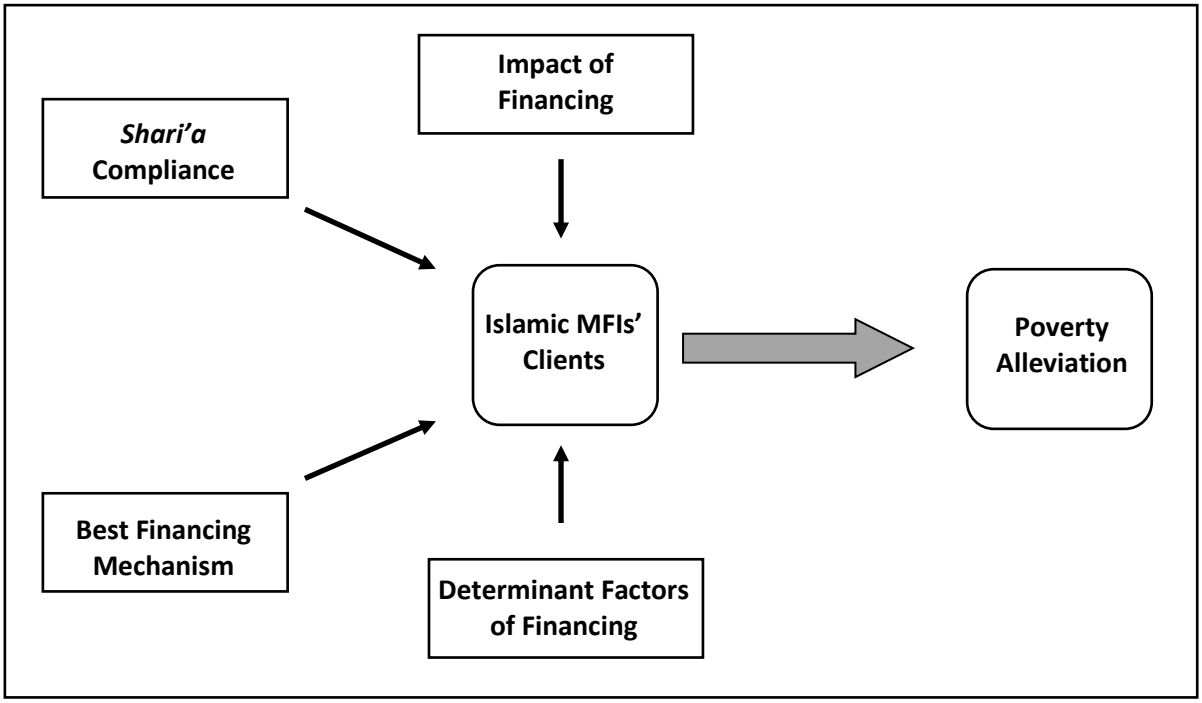
Chapter 4

Research Data and Methodology

This chapter discusses the empirical models used to investigate the impact of Islamic MFIs' financing on Indonesian rural households' welfare; evaluates *shari'a* compliance financing by Islamic MFIs servicing Indonesian rural households; investigates the impact of two financing mechanisms on Indonesian rural households' welfare; and identifies the determinants that influence rural households to become clients of Islamic MFs. In addition, a discussion of sample and data collection in this study and chapter summary are presented at the end of the chapter.

4.1 Research framework

Figure 1 shows the research framework used in this study. The study investigates Islamic MFIs in Indonesia and focuses on: (1) evaluating the impact of Islamic MFIs' financing; (2) assessing *shari'a* compliance; (3) investigating the best practices of Islamic MFIs' financing mechanisms; and (4) identifying the determining factors that influence Indonesian rural households to become clients of Islamic MFs.



Source: Rahman and Ahmad (2010), Dusuki (2006), Shahinpoor (2009), Obaidullah and Khan (2008), Seibel and Dwi Agung (2006).

Figure 4.1 Research framework for the investigation of Islamic MFIs.

4.2 Evaluating the impact of Islamic MFIs' financing

4.2.1 Conceptual framework

The perception of financing in Islamic MFIs is different from conventional MFIs. This is because products and services from Islamic MFIs must be free from interest (*riba*) and should follow the *shari'a* standard of Islamic scholars (Obaidullah & Khan, 2008). In Indonesia, Islamic financial institutions such as Islamic banks, Islamic insurance, and including Islamic MFIs, must have a *shari'a* supervisory board in their institution, and their financing procedures have to comply with the *shari'a* standards that are set by the national *shari'a* board of Indonesia (Hasbi, 2015; Nasution, 2015).

Previous studies on the impact assessment of Islamic MFIs have used some methods. Rahman and Ahmad (2010) used ordinary least squares to estimate the effect of Islamic microfinance programmes in Bangladesh. Adnan and Ajija (2015) used poverty indexes (e.g., the Headcount Index, the Poverty Gap, the Sen Index, and the Foster, Greer and Thorbecke Index) to measure the impact of Islamic MFIs on rural households in Indonesia. In conventional MFIs, various complicated methods have been used to identify the impact of microfinance. The popular method to identify the true effect of programmes or treatments for conventional MFIs is the difference-in-difference (DID) method (Li et al., 2011b).

Income and expenditure are two economic indicators that are frequently used in measuring the welfare impact of microfinance. Many studies have used the changes in income and expenditure of rural households to identify the impact of loans or financing from microfinance programmes or institutions (see, for example, for conventional microfinance, Li et al., 2011; Islam and Harris, 2008; and Pitt and Khandker 1998; for Islamic microfinance see Adnan and Ajija, 2015; Rahman and Ahmad, 2010).

Our study follows previous studies, uses changes in annual income and expenditure to measure the impact of Islamic MFI financing on rural household welfare. Let us assume D_i is a binary symbol for a treatment or programme, which in this study is Islamic MFI financing; $D = 1$ when financing is received from an Islamic MFI by subject i and $D_i = 0$ for a non-client subject i. Next, Y_{i1} and Y_{i0} are two outcomes (income and expenditure) that are correlated with D_i. The aim of the assessment is to find the impact of Islamic MFI financing, which is expressed by Δ_i for subject i; the true impact of the financing will be (Li, 2010; Perry & Maloney, 2007):

$$\Delta_i = Y_{1i} - Y_{0i} \qquad (4.1)$$

The issue in evaluating the true impact is basically a missing data problem because the same subject cannot be observed in both client and non-client states at the same time. In other words, it is not possible to examine Y_{1i} and Y_{0i} for the same subject (Li, 2010; Perry & Maloney, 2007). This problem occurs in both experimental and non-experimental assessment methods (Heckman & Smith, 1995). The observed outcome for each subject i can be described as follows:

$$Y_i = D_i Y_{1i} + (1 - D) Y_{0i} \quad (4.2)$$

Where Y_i is either Y_{1i} or Y_{0i} and the observed outcome is called 'counterfactual' (Li, 2010; Perry & Maloney, 2007).

A statistical technique is used in impact evaluation studies to substitute for the missing data. The use of group means or other group statistics in the substitution can alternate for the missing data for individual subjects (Li, 2010). The average treatment effect on the treated (ATT) framework is the most popular framework in impact evaluation (Becker & Ichino, 2002; Firpo, 2007; Hirano, Imbens, & Ridder, 2003; Li, 2010; Perry & Maloney, 2007). The ATT framework is about the expected gain (or loss) by individuals who received the treatment compared with individuals who did not receive the treatment (in a counterfactual situation) (Heckman & Smith, 1995; Perry & Maloney, 2007).

In this case, the true effect of the Islamic MFI financing impact is (Li, 2010; Perry & Maloney, 2007):

$$E(\Delta_i \,|\, D_i = 1) = E(Y_{1i} \,|\, D_i = 1) - E(Y_{0i} \,|\, D_i = 1) \quad (4.3)$$

As it is not feasible to examine Y_{0i} for those who become clients of Islamic MFIs, we can use it from the non-clients of Islamic MFI and the assumption is (Perry & Maloney, 2007):

$$E(Y_{1i} \,|\, D_i = 1) = E(Y_{0i} \,|\, D_i = 0) \quad (4.4)$$

The estimate of ATT is then (Perry & Maloney, 2007):

$$E(\Delta_i \,|\, D_i = 1) = E(Y_{1i} \,|\, D_i = 1) - E(Y_{0i} \,|\, D_i = 0) \quad (4.5)$$

Following the framework of the treatment and control groups, our study evaluates the impact of Islamic MFI financing by comparing the average net rural household outcome (annual income and expenditure) between rural households that join and receive financing from Islamic MFIs (client/treatment group) and rural households that did not join nor receive financing from Islamic MFIs (non-client/control group).

4.2.2 Selection bias issues

Selection bias can occur in impact assessment. This would influence the reliability of the impact estimation (Li et al., 2011b). The selection bias problem arises when there are unobserved factors that influence the participation of both groups of individuals (clients and non-clients) (Li, 2010; Perry & Maloney, 2007). The ATT framework depends heavily on the assumption that non-client and client outcomes are the same (Perry & Maloney, 2007). If we use the non-client outcome to represent the outcome of non-participating clients, it can be expressed by the following equation (Heckman, 1997; Li, 2010; Perry & Maloney, 2007):

$$E(Y_{1i} \mid D_i = 1) - E(Y_{0i} \mid D_i = 0)$$

$$= E(Y_{1i} - Y_{0i} \mid D_i = 1) + [E(Y_{0i} \mid D_i = 1) - E(Y_{0i} \mid D_i = 0)]$$

$$= E(\Delta_i \mid D_i = 1) + [E(Y_{0i} \mid D_i = 1) - E(Y_{0i} \mid D_i = 0)] \quad (4.6)$$

Based on equation (4.6), if $[E(Y_{0i} \mid D_i = 1) - E(Y_{0i} \mid D_i = 0)]$ is zero then $E(\Delta_i \mid D_i = 1)$ will be an unbiased estimator for the impact of ATT; if otherwise, then ATT is biased and selection bias will occur (Heckman & Smith, 1995; Li, 2010; Perry & Maloney, 2007). A correctly formed control group is essential and this is a major challenge in the study with a treatment/control framework (Heckman & Smith, 1995; Li, 2010; Perry & Maloney, 2007).

To evaluate the potential bias, we can use the following equation (Coleman, 1999; Li, 2010):

$$M_{ij} = \alpha_M X_{ij} + \beta_M V_j + \varepsilon_{ij} \quad (4.7)$$

$$Y_{ij} = \alpha_Y X_{ij} + \beta_Y V_j + \delta_Y M_{ij} + \mu_{ij} \quad (4.8)$$

Where M_{ij} is rural household i receiving finance from an Islamic MFI (client) in village j; X_{ij} is the rural household characteristics (vector); V is the village attributes (vector) and the investigated rural household outcome is denoted by Y_{ij} (Coleman, 1999; Li, 2010). The errors representing unmeasured rural household and village characteristics for clients that received finance from Islamic MFIs and the outcomes are denoted by ε_{ij} and μ_{ij}, respectively (Coleman, 1999). The correlation between ε_{ij} and μ_{ij} will lead to selection bias; the impact estimate δ_Y will be biased if the correlation between the two errors is not taken into account (Coleman, 1999; Li, 2010).

Selection bias can occur because: of (1) non-random programme placement, and (2) rural households' self-selection into the programme (Coleman, 1999; Li, 2010). Non-random programme placement refers to the non-random programme placement of Islamic MFIs based on the observed and unobserved characteristics of the areas (Li, 2010). Selection bias may arise when comparing rural households (clients) from existing Islamic MFI villages and rural households (non-clients) (Li, 2010). For instance, if one village is observed as better organized, having more leaders (unmeasured village characteristics) and these criteria are used to determine programme placement, then a correlation between ε_{ij} and μ_{ij} will occur (Coleman, 1999; Li, 2010).

The rural households' self-selection means that rural households decided whether they will join and receive finance from an Islamic MFI (Coleman, 1999; Li, 2010). The "self-selection" to join the institution is based on people's perceptions of Islamic MFIs (Li, 2010). This condition will lead to a correlation between ε_{ij} and μ_{ij} because the household characteristics that led them to join an Islamic MFI may not be perfectly controlled (Li, 2010).

Table 4.1 Methods to address the problem of error correlation.

Method	Description	Weaknesses
Instrumental variables	Identifying instruments that will be variables to include as regressors in the programme equation	Difficult to determine the correct variables
Panel data	Using data from the two periods (at least), to get reliable estimates by differencing the impact of "unobserved factors"	Time-consuming and costly
Error distribution	Assuming normal error distribution, impact of treatment or programme determined by calculating the deviation from normality of outcome in the treatment group	Generally, no good basis to make assumptions, highly sensitive results (related with error distribution), the treatment impact identification sometimes is impossible (in the case of censored dependent variables)

Sources: Li (2010); Coleman (1999).

There are three method used in order to address the correlation of ε_{ij} and μ_{ij}. They are: (1) instrumental variables; (2) panel data; and (3) assuming a normal error distribution (see Table 4.1) (Coleman, 1999). The first method to mitigate selection bias is to use instrumental variables as this method uses exogenous variables to be incorporated in equation (4.7) as regressors but not in equation (4.8). The problem is that it is difficult to determine the variables to include in the equation (Coleman, 1999; Li, 2010). The second method to mitigate selection bias is to use a panel data model (a minimum of two periods) observation of the same set of household characteristics. The problem with this method is that it is time-consuming and costly (Coleman, 1999; Li et al., 2011b). The third

method is to assume an error distribution of the outcome variable without treatment is always the normal distribution. The problem with this method is that it is highly sensitive to results, which is not a good basis on which to make assumptions and it is sometimes impossible to identify the treatment effect (Coleman, 1999). We use the second method because of the problems with the first and third methods as given in Table 4.1.

4.2.3 Empirical framework

In our study, the difference-in-difference (DID) technique is used to measure the impact of Islamic MFIs financing. This is a popular panel data method in economics to identify the impact of treatments in the absence of pure experimental data (Athey & Imbens, 2006; Lee, 2016; Li et al., 2011b). The method requires two periods, one before treatment and one after treatment (Lee, 2016). The first group in this study is the clients' group that consists of rural households that become clients and receive financing from Islamic MFIs. The second group is rural households (non-clients) that did not receive financing from Islamic MFIs (Athey & Imbens, 2006; Li et al., 2011b).

The standard DID model is illustrated by the following regression equation:

$$Y_{it} = \beta_0 + \delta_0 d2_t + \beta_1 P_i + \gamma M_{it} + \varepsilon_i \quad (4.9)$$

Where Y_{it} is a rural household outcome in natural logarithm form for rural household i at period t. Rural household annual income and expenditure are examples of household outcomes. The time dummy variable is represented by $d2_t$ which equals 1 if $t = 2$ means the post-financing period (1) and equals 0 if $t = 1$ means the pre-financing period (0). P_i is a group dummy variable equal to 1 if the rural household i is a client and obtained finance from Islamic MFIs and 0 otherwise. M_{it} is an interaction between $d2_t$ and P_i, which is equal to 1 if the rural household i obtains finance, is a client of an Islamic MFI and the observation takes place in the post financing period, 0 otherwise (Li et al., 2011b).

This study follows the framework in Kondo et al. (2008) and Li et al. (2011b) with an adjusted standard DID model adding the area/village attributes, and observable rural household characteristics with fixed effect estimation. Fixed effect is used in this study because the household specific effect is more than the individual effect. Fixed effect is also used to control for unmeasured household and village attributes, which can resolve selection bias at the household and village levels (Islam & Harris, 2008; Li et al., 2011b).

The adjusted DID model is:

$$Y_{it} = \beta_0 + \delta_0 d2_t + \alpha X_{it} + \gamma M_{it} + h_{it} + u_{it} \quad (4.10)$$

Where X_{it} is the rural household characteristic, in this study, we used major loss over (ML) that is, the loss experienced by rural households during the financing period that affected their income and expenditure (e.g., a natural disaster or crop failure). M_{it} is the treatment variable that refers to financing from Islamic MFIs, h_{it} is rural households' fixed effects, that is, unobserved individual or specific effects, u_{it} is idiosyncratic error, δ_0 is time suffered for both groups (treatment and control), γ is the main parameter that explains Islamic MFIs' financing impact on rural households' welfare, Y_{it} is the same as in equation (4.9) (Abadie, 2005; Athey & Imbens, 2006; Li et al., 2011b).

4.3 Evaluating *shari'a* compliance and Islamic values

Research objective 2 examines *shari'a* compliance and the implementation of values by Islamic MFIs. To answer this objective, this study investigated the procedures and mechanisms of the schemes based on the literature and standards from national *shari'a* board of Indonesia and compared them with the existing implementation of the schemes. Table 4.2 lists the common schemes in Islamic MFIs and highlights the procedures and mechanisms in the literature and standards.

The *shari'a* compliance investigation is based on the two main financing schemes, PLS and non-PLS. This study asked respondents about the *shari'a* compliance of Islamic MFIs' schemes based on the eight schemes displayed in Table 4.2. The *shari'a* compliance is crucial in Islamic MFIs and, at the micro level, the probability of violation of *shari'a* standards is higher (Obaidullah & Khan, 2008).

Evaluation of *shari'a* compliance in Islamic MFIs' schemes was conducted through a survey questionnaire with a five point Likert Scale. The survey asked the clients their experience of the financing they received. The purpose of the assessment was to identify whether Islamic MFIs comply with the schemes' guidance based on the literature and the standards set by the National *Shari'a* Board of Indonesia.

Shari'a standards are divided into two financing groups: PLS and non-PLS schemes. Respondents answered the statement based on the financing scheme that they received. The *shari'a* standards derived from the literature and the National *Shari'a* Board of Indonesia are given below.

Table 4.2 Schemes in Islamic MFIs.

No	Types	Schemes	Procedure and Mechanism
1	Profit and Loss Sharing (PLS) contracts	*Mudharabah*	• Funding 100% from Islamic MFIs • Clients provide the skill • Profits are shared at a fixed ratio; losses are borne by IMFIs
2		*Musharakah*	• Both parties contribute to the equity • Profits are shared in an agreed ratio • Losses are shared based on equity participation
3		*Muzara'ah*	• Islamic MFIs provide the land • Clients provide the labour • Crops are divided between Islamic MFIs and clients based on an agreed portion • Distribution of income at the end of the season
4		*Muzaqat*	• Both parties contribute to the equity • The harvest is shared based on equity participation
5	Non-Profit and Loss Sharing (non-PLS) contracts	*Murabahah*	• Islamic MFIs sell goods to the clients after they mark-up the price • Payment is based on instalments • Real costs of the goods and profit are disclosed
6		*Bai' salam*	• Islamic MFIs act as a seller and buyer for agricultural goods • Quality, quantity, price, and time of delivery are determined at the beginning of the contract • This scheme can be combined with other possible schemes, e.g., *murabahah*
7		*Ijarah wa itiqna'*	• Islamic MFIs lease the goods with a purchase option at the end of the contract • A portion of the regular payment is applied to purchase the goods • The goods are transferred to the clients at the end of the period
8		*Qard al-hasanah*	• Zero return on loan • Administration and transaction costs are permissible

Sources: (Dhumale & Sapcanin, 1999; Shahinpoor, 2009); (Obaidullah, 2008).

The *shari'a* standard for PLS schemes (Dhumale & Sapcanin, 1999; Shahinpoor, 2009; The Council of Indonesian Ulama, 2013):

Mudharabah

1. Islamic MFIs contribute 100% of the capital and clients contribute the effort.
2. Losses are borne by the Islamic MFI as long as there is no fraud or negligence by the client.

Musharakah

1.A guarantee is not compulsory in this scheme.

2. Any loss is borne by both parties (Islamic MFI and client) based on the capital contribution.

Muzaqat

1. The Islamic MFI and client contribute equity in the orchard sector.
2. The harvest is shared based on the equity participation.

Muzara'ah

1. The Islamic MFI and client contribute equity in the orchard sector.
2. The harvest is shared based on the equity participation.

The *shari'a* standard for non-PLS schemes (Dhumale & Sapcanin, 1999; Shahinpoor, 2009; The Council of Indonesian Ulama, 2013):

Murabahah

1. Ownership of the goods or assets belongs to the Islamic MFI before the transaction (before goods are sold to the clients).
2. Islamic MFIs always disclose the cost of goods and their margin before proceeding to a sale and purchase agreement.

Salam

1. Before the transaction, Islamic MFIs and clients always discuss and agree on the quality, quantity, and delivery time of the goods.
2. Payment from Islamic MFIs is made at the time the contract was agreed, delivery of the goods from clients is at a later date.

Ijarah

1. Clients of Islamic MFIs have to take an Ijarah (leasing) contract first before proceeding to an Ijarah wa iqtina' contract.
2. There is no requirement from Islamic MFIs to buy the goods at the end of the Ijarah (leasing) period.

Qard

1. Islamic MFIs do not ask for any benefit from the loan/financing.

2. Islamic MFIs always consider rescheduling or writing off the loan/financing if clients have difficulty in repaying the loan/financing.

For the Islamic values' assessment, this study developed a survey questionnaire based on the study by Rahman and Ahmad (2010). The Islamic values' evaluation in this study is divided into four parts: (1) the influence of clients' beliefs in their financial decision; (2) the implementation of clients' beliefs in their daily lives; (3) clients' opinions on *shari'a* compliance; and (4) clients' financing experiences (see Appendix D).

The Islamic values assessment was conducted only for Islamic MFIs clients and was based on the clients' opinions and their financing mechanism experiences. The aim of this assessment was to identify the Islamic MFI clients' level of Islamic values and which type of client (PLS or non-PLS) has better Islamic values.

4.4 Assessing and comparing the impact of PLS and non-PLS financing on rural household welfare

4.4.1 Conceptual framework

There are very few empirical studies that have investigated the two financing groups in Islamic MFIs: PLS and non-PLS financing, especially their impacts on rural household welfare. It is difficult to identify which financing mechanism is better and with more benefits for the recipients. There is still debate among Islamic finance scholars about which financing mechanism is better, PLS or non-PLS, and there is limited study with evidence about which is better. Therefore, it is important to conduct an empirical study to identify which of the two financing mechanism has more advantages for the recipients.

Previous studies, such as those of Dusuki (2006), Asutay (2007), Azmat et al. (2015), Ibrahim and Mirakhor (2014), believe that PLS schemes represent the true spirit of Islamic finance and an ideal financing scheme. PLS financing also distinguishes Islamic finance from conventional financing. However, the studies did not provide sufficient evidence that PLS is better than non-PLS. An empirical study based on an impact measurement used in this study can identify which of the two financing schemes has a better impact on rural household welfare. Changes in income and expenditure are used as the indicator of impact measurement.

4.4.2 Empirical framework

The double DID method is used to estimate the impact of PLS and non-PLS financing in order to distinguish which financing method has the greater impact on rural household welfare.

The standard and adjusted DID model equations are similar to equations (4.9) and (4.10). The standard DID model for PLS financing is:

$$Y_{it} = \beta_0 + \delta_0 d2_t + \beta_1 P_i + \gamma M_{it} + \varepsilon_i \quad (4.11)$$

The standard DID model for non-PLS financing is:

$$Y_{it} = \beta_0 + \delta_0 d2_t + \beta_1 P_i + \gamma M_{it} + \varepsilon_i \quad (4.12)$$

Where Y_{it} is rural household outcome in natural logarithm form for rural household i at period t. The rural household annual income and expenditure are examples of household outcomes. The time dummy variable is represented by $d2_t$ which equals 1 if $t = 2$ means the post-PLS financing period and equals 0 if $t = 1$ means the pre-PLS financing period. P_i is a group dummy variable equal to 1 if the rural household i is a client and obtained PLS finance from an Islamic MFI and 0 otherwise. M_{it} is an interaction between $d2_t$ and $P_{i,}$ which is equal to 1 if the rural household i obtains PLS financing, is a client of an Islamic MFI and the observation takes place in the post PLS financing period, 0 otherwise (Li et al., 2011b). Equation (4.12) is similar to equation (4.11) except that non-PLS financing is used instead of PLS financing.

The adjusted DID model for PLS financing is:

$$Y_{it} = \beta_0 + \delta_0 d2_t + \alpha X_{it} + \gamma M_{it} + h_{it} + u_{it} \quad (4.13)$$

The adjusted DID model for non-PLS financing is:

$$Y_{it} = \beta_0 + \delta_0 d2_t + \alpha X_{it} + \gamma M_{it} + h_{it} + u_{it} \quad (4.14)$$

Where X_{it} is the rural household's characteristics, in this study, we used major loss (ML), which is the loss experienced by rural households during the PLS financing period that affected their incomes and expenditures (e.g., natural disaster or crop failure). M_{it} is the treatment variable that refers to PLS financing from Islamic MFIs, h_{it} is rural households' fixed effects, that is, unobserved households' individual or specific effects, u_{it} is idiosyncratic error, δ_0 is time suffered for both groups (treatment and control), γ is the main parameter that explains Islamic MFIs' PLS financing impact on rural households' welfare, Y_{it} is the same as in equations (4.11) and (4.12) (Abadie, 2005; Athey & Imbens, 2006; Li et al., 2011b). Equation (4.14) is similar to equation (4.13) except that non-PLS financing is used instead of PLS financing.

4.5 Factors that influence rural household to become client of Islamic MFI

4.5.1 Conceptual framework

Factors that determine if rural households become clients of Islamic MFIs can be defined in terms of the rural households' characteristics. The desire to become a client and access Islamic MFIs' financing can be derived from the rural households' characteristics and the attributes that influence their choice (Phan, 2012). Diagne and Zeller (2001) indicate that rural households are characterised as resource-poor, or only require borrowing small loans, and prefer to access informal or semi-formal methods rather than formal credit institutions. While rural households with good economic circumstances may access formal credit more easily because they can meet the formal lending requirements, such as providing collateral and minimum regular income to pay the instalments (Diagne & Zeller, 2001; Li, 2010).

Rural household characteristics such as income, gender, age, and education, are forecast to influence rural households in becoming MFI clients (Li, 2010). In addition, another factor that influences rural households to become clients is from the supply side, i.e., from the Islamic MFI, e.g., Umoh (2006) argues that financing or lending policies (e.g., financing requirements, financing procedures) of the institution (Islamic MFI) can generally influence the desire of a rural household to become a client. Furthermore, some unique features of the institutions can restrict rural households from becoming Islamic MFI clients; these features include membership requirements, self-selected financing groups, and group financing. Other factors, including achieving repayment targets and ensuring institutional financial viability, may induce MFIs to refuse to finance rural households who appear to be riskier clients (Li, 2010).

4.5.2 Empirical framework

The discrete choice model (DCM) is used to analyse the factors that influence Indonesian rural households to become Islamic MFI clients. The basic idea of DCM is modelling the choice from a set of mutually exclusive and collectively exhaustive alternatives (Ben-Akiva & Lerman, 1985). Ben-Akiva and Lerman (1985) claim that DCM is about utility maximization, which means the selection of an alternative by the decision maker that has the highest utility at the time the choice is made. In other words, DCM explains the choices made by the decision makers among the alternatives (Train, 2009). This brings us to the concept of random utility models where the probability of an alternative i being selected from a set of choices C_n by individual n is explained by the following equation (Ben-Akiva & Lerman, 1985):

$$P(i|C_n) = Pr(U_{in} \geq U_{jn}, \forall, j \in C_n) \quad (4.15)$$

Where U_{in} and U_{jn} denote the utilities that individual n obtains from alternatives i and j (Li, 2010). In the equation (4.15), we neglect the probability of $U_{in} = U_{jn}$ for any i and j in the set of choice, especially if the distributions of U_{in} and U_{jn} can be defined by a probability density function, $Pr(U_{in} = U_{jn}) = 0$ (Ben-Akiva & Lerman, 1985). The probability of individual n selecting alternative i is (Ben-Akiva & Lerman, 1985):

$$P_n(i) = Pr(U_{in} \geq U_{jn}) \tag{4.16}$$

whereas for alternative j it is (Ben-Akiva & Lerman, 1985):

$$P_n(j) = 1 - P_n(i) \tag{4.17}$$

Because U_{in} and U_{jn} are random variables, we can then divide them into two equations (Ben-Akiva & Lerman, 1985; Li, 2010):

$$U_{in} = V_{in} + \varepsilon_{in}, \tag{4.18}$$

and,

$$U_{jn} = V_{jn} + \in_{jn} \tag{4.19}$$

Where V_{in} and V_{jn} are the systematic or representative elements of the utility i and j, while ε_{in} and ε_{jn} are the disturbances or random elements (Ben-Akiva & Lerman, 1985).

Ben-Akiva and Lerman (1985) argue that the derivation of any binary choice model is generally clear, it assumes different distributions of the two disturbances $(\varepsilon_{jn} - \varepsilon_{in})$ and its density function $f(\varepsilon_n)$ (Ben-Akiva & Lerman, 1985; Li, 2010).

The simplest and extensively used discrete choice model is logit because logit is similar to the formula of choice probability (Train, 2009). The basic assumption of the logit model is $(\varepsilon_n = \varepsilon_{jn} - \varepsilon_{in})$ which means the difference of the two random components of utility is logistically distributed (Ben-Akiva & Lerman, 1985; Li, 2010):

$$F(\varepsilon_n) = \frac{1}{1 + e^{-\mu\varepsilon_n}}, \qquad \mu > 0, \; -\infty < \varepsilon_n < \infty \tag{4.20}$$

$$f(\varepsilon_n) = \frac{\mu e^{-\mu\varepsilon_n}}{(1+e^{-\mu\varepsilon_n})^2} \quad (4.21)$$

Where μ is a positive scale parameter; apart from adequately approximating the normal distribution it also is analytically convenient in using the logistic distribution (Ben-Akiva & Lerman, 1985).

Under the assumption that ε_n is logistically distributed, the choice probability for alternative i is (Ben-Akiva & Lerman, 1985; Li, 2010; Train, 2009):

$$P_n(i) = Pr(U_{in} > U_{jn})$$

$$= \frac{1}{1+e^{-\mu(V_{in}-V_{jn})}}$$

$$= \frac{e^{\mu V_{in}}}{e^{\mu V_{in}} + e^{\mu V_{jn}}} \quad (4.22)$$

Equation (4.22) is a binary logit model, V_{in} and V_{jn} are linear parameters (Ben-Akiva & Lerman, 1985):

$$V_{in} = \beta X_{in} \quad (4.23)$$

$$V_{jn} = \beta X_{jn} \quad (4.24)$$

Where X_{in} is an observed variable (vector) for alternative i and for decision maker n; β is an unknown parameter (vector) related to the variables. The logit probability then is given as (Ben-Akiva & Lerman, 1985; Li, 2010; Train, 2009):

$$P_n(i) = \frac{e^{\beta X_{in}}}{e^{\beta X_{in}} + e^{\beta X_{jn}}} = \frac{1}{1+e^{-\beta(X_{in}-X_{jn})}} \quad (4.25)$$

According to Ben-Akiva and Lerman (1985), the parameter μ cannot be differentiated from the overall scale of βs (in the case of linear-in-parameter utilities). Usually, the assumption is $\mu = 1$ (Ben-Akiva & Lerman, 1985).

Rural households in Indonesia may choose to become Islamic MFI clients or not depending on the utilities of the two choices based on the binary choice model (Li, 2010; Umoh, 2006). Therefore, the logit model to forecast the probability of rural household n becoming an Islamic client is (Li, 2010):

$$P_n(Y_n = 1) = Pr(U_{1n} > U_{0n}) = Pr(Z_n > 0) = \frac{1}{1 + e^{-\beta X_n}} \quad (4.26)$$

Where: Y_n equals 1 if the rural household is a client of an Islamic MFI and 0 otherwise; and

P_n is the estimated probability of a rural household becoming a client of an Islamic MFI.

The analysis in this study focuses on rural households that choose to become clients and receive financing from Islamic MFIs. This study uses the reduced form equation (4.27) to identify the determinants that influence Indonesian rural households to become clients of Islamic MFIs:

$$CLN = f(AGE, AGE^2, GND, HOS, EDU, OFS, ADI, INC, EXP, MRD) \quad (4.27)$$

Table 4.3 Definition of variables used in equation (4.27).

Variable Name	Definition
CLN	Dummy variable equal to 1 if a rural household is a client and received financing from an Islamic MFI; 0 otherwise
AGE	Age of the head of the rural household (six age groups)
AGE^2	Age squared of the head of the rural household
GND	Dummy variable equal to 1 if the rural householder is male; 0 otherwise
HOS	Size of the rural household (number)
EDU	Dummy variable equal to 1 if a rural household member has middle school level education or above; 0 otherwise
OFS	Dummy variable equal to 1 if a rural household member is a government officer; 0 otherwise
ADI	Dummy variable equal to 1 if the rural household has additional income; 0 otherwise
INC	Rural household income (six income groups)
EXP	Rural household expenditure (six expenditure groups)
MRD	Dummy variable equal to 1 if the rural householder is married; 0 otherwise

Table 4.3 shows the variables that influence rural households to become Islamic MFI clients using the logit model. The dependent variable is client (CLN), which represents the choice of a rural household

to become an Islamic MFI client. It is a dummy variable with the value '1' if a rural household is a client and received finance from an Islamic MFI and '0' otherwise. There are 10 explanatory or independent variables in equation (4.31). The first variable is age (AGE); the age of rural households were grouped into six categories, because this study wants to identify any relationship between rural household age and the choice to become an Islamic MFI client. Previous studies such as Li et al. (2011a) and Okurut (2006), used age as an independent variable to identify the accessibility of microfinance programmes. The second variable is age squared (AGE^2); the aim of this variable is to confirm the result of the variable (AGE) because it is possible that Islamic MFIs have certain financing requirements in terms of age. This study wanted to identify the influence of age squared on the probability of becoming an Islamic MFI client. A previous study by Okurut (2006) found an inconclusive relationship of *AGE* and AGE^2 on the accessibility of credit in South Africa. For instance, for credit accessibility in a bank, age has a positive and significant impact and age squared is negative and significant while for informal credit, the impact of age is negative and age squared is positive, with both significant (Okurut, 2006).

The third variable is gender (GND), which is a dummy variable equal to '1' if the rural householder is male and '0' otherwise. Previous studies on accessibility to microfinance that employed gender in their independent variables are Okurut (2006) and Li et al. (2011a). Based on the study by Okurut (2006) being male has a negative but insignificant relationship with the access to informal credit, implying that there is no discrimination against woman in South Africa. The next variable is rural household size (HOS) (a number) to identify whether the size of the rural household influences a rural household's decision to become an Islamic MFI client. A previous study that included household size in the explanatory variable is that of Vaessen (2001), who found that household size has a positive relationship, implying that a larger household size is more likely to become a client of rural credit in Northern Nicaragua. The fifth variable is rural household education (EDU) which is a dummy variable equal to '1' if the rural householder has middle school education level or above and equal to '0' otherwise. Some previous studies, such as those of Vaessen (2001), Okurut (2006), Dzadze et al. (2012), and Li et al. (2011a), included education as an independent variable to explain the accessibility of microfinance. Studies by Vaessen (2001) and Dzadze et al. (2012) showed that education level has a positive and significant relationship with the accessibility of credit.

The sixth variable is whether a rural household member is a government officer (OFS), which is a dummy variable equal to '1' if a rural household member is a government officer and '0' if otherwise. Previous studies that identify a relationship of official status to accessibility of microfinance include Khoi et al. (2013) and Li et al. (2011a). The study by Khoi et al. (2013) found that being a government officer had a positive and significant relationship with accessing formal microcredit in the Mekong River Delta of Vietnam. Variable seven is the household which has additional income (ADI), which is a

dummy variable equal to '1' if the household has additional income in their family and '0' if otherwise. Next is rural household annual income (INC) and expenditure (EXP), this variable is used to identify if rural household income and expenditure influence the decision to join an Islamic MFI. Some previous studies that used income and expenditure in their independent variables are those of Umoh (2006), Khoi et al. (2013), Okurut (2006), and Li et al. (2011a). A study by Li et al. (2011a) found that income had a positive and significant relationship with the accessibility of microcredit in China, while a study by Okurut (2006) found that household expenditure had a positive relationship with bank accessibility in South Africa. The final explanatory variable is rural household marital status (MRD), which is equal to '1' if the rural household has married members and '0' otherwise.

4.6 Factors that influence rural households to become clients of Islamic MFIs

4.6.1 Sampling method

This study investigates formal Islamic MFIs that are under the supervision of the Ministry of Cooperatives and Micro and SMEs of the Republic of Indonesia (MoCMSMEs). Formal Islamic MFIs in Indonesia include the Islamic Financial Services Cooperatives (KJKS) and the Islamic Financial Services Units (UJKS). These institutions are directly supervised by the Indonesian government.

The target population was clients of formal Islamic MFIs in Indonesia and there are approximately 762,000 clients (Sugianto, 2012). This study focused on rural households that are clients and non-clients[30] of formal Islamic MFIs in East Java. Based on statistics from the Ministry of Cooperation and SMEs of the Republic of Indonesia, 48% of formal MFIs in Indonesia are in Java, with 29.59% in East Java (Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia, 2013).

This study used the Yamane Taro sample formula to determine the study sample size (Israel (1992). The sample size formula for an unknown population is $n_0 = Z^2pq/ e^2$ and for a finite population is $n = n_0/ (1 + ((n_0 - 1) / N))$. For the two formulas, n_0 is the sample size before considering the population; Z is the confidence interval of the normal distribution; p is the variation of variable interest; e is the margin of error; and N is the size of the population. This study used a 95% confidence interval (Z = 1.96), p = 0.5, e = 0.05 and N = 762,000. Based on these assumptions and population, we obtained a sample size of 384. However, 548 respondents were interviewed to allow for incomplete responses. This study interviewed rural households using the convenience sampling method. Convenience sampling was used in this study because it is difficult to obtain a complete mailing list of Islamic MFIs' clients and non-clients. The method is also suited to identifying respondents appropriate for the study (Quinlan, 2011).

[30] This study includes non-clients (the rural households that are not clients and did not get financing from Islamic MFIs) to form a control group for the difference in difference (DID) method.

The data on the income and expenditure of rural households before and after joining an Islamic MFI were obtained through an interview (primary data). There were 548 interviewees from four Islamic MFIs in East Java, Indonesia. The respondents were personally interviewed; the usable data comprised 429 responses (78.28% response rate). These data were used to answer objectives one, two, and four but for objective three, which assesses and compares the impact of the PLS and non-PLS financing mechanisms, the data came from 414 usable responses (75.54% response rate).

This study interviewed rural household members using convenience sampling because it is difficult to obtain a complete mailing list of Islamic MFIs' clients. There is no reliable database of Islamic MFIs and their clients are either from the government or financial authorities of Indonesia. The technique is also suited to finding respondents who are suitable for the research (Quinlan, 2011). The samples were selected from four Islamic MFIs in East Java, Indonesia. East Java comprises 29 regencies and 9 cities; the samples in this study were from three regencies in East Java.

This study used data on Islamic MFIs' clients who started their financing at the end of 2013 and this timing is to address the issue of Ashenfelter's dip. Ashenfelter's dip, sometimes called a 'pre-programme dip' is defined as a drop or decline in earnings of individuals or households before a programme started which compromises the DID results (Heckman & Smith, 1999). It is suggested that the existence of Ashenfelter's dip should be addressed when employing a DID model. To solve the problem of Ashenfelter's dip, Bergemann, Fitzenberger, and Speckesser (2005) suggest not using individual or household earnings data that are close to the start of the programme or treatment. Therefore, this study used data of the income and expenditure of respondents from a year before the treatment started, which was in 2012 (pre-treatment period). The income and expenditure data in 2014 are from the post-treatment period.

4.6.2 Survey instruments

This study used a structured survey questionnaire to answer the four research objectives. The structured questionnaire consisted of eight sections with the first section investigating rural household accessibility and the characteristics of microfinance in general. The second section focused on general information about Islamic MFIs; client financing (PLS and non-PLS). Section three gathered data about non-clients. Section four focused on questions of rural household wealth (clients and non-clients). The fifth section focused on *shari'a* compliance and Islamic values questions for the clients. Section six gathered data about clients with PLS and non-PLS financing. Section seven explored the programmes and assistance provided by the government and finally, the eighth section contained information on the demographic and socioeconomic characteristics of rural households. The questionnaire was submitted to the Human Ethics Committee (Lincoln University) before being administered to the respondents.

A random pilot test with a sample of 15 rural households in East Java was conducted before administering the survey. This pilot test was carried out to obtain feedback to improve the content of the questionnaire. This included testing the constructs, measures and reliability. The survey was personally administered between December 2014 and February 2015. The total population in East Java was about 38.36 million in 2013 (*Jawa Timur Population*, 2013; Ministry of Forestry of the Republic of Indonesia, 2011). East Java was chosen for the study site because about 48% of formal MFIs are in the area (Ministry of Cooperatives and Micro and SMEs' of Republic of Indonesia, 2013).

4.7 Chapter summary

This chapter discussed the research framework and literature of the research methodology used in this study. The research framework shows the focus in this study which is to cover four objectives: the impact of financing; *shari'a* compliance; best financing mechanisms; and the determinant factors that influence rural households to receive financing from Islamic MFI. The chapter then provided a conceptual and empirical framework of an impact assessment method especially on an ATT framework which is the popular framework for impact evaluation. The popular panel data methods in economics to identify the impact of treatment i.e., DID and the fixed effect regression were also discussed in this chapter.

Next, this chapter also provided the *shari'a* standards, especially the standards set by the National *shari'a* board of Indonesia which include four schemes under PLS financing mechanisms and four schemes under non-PLS. in regard to identifying the ideal financing mechanism (between PLS and non-PLS) which has the more positive impact on rural households' welfare, this chapter discussed some previous studies that have been done in comparing these two financing mechanisms. This chapter then elaborated the double DID and double fixed effect regression to investigate the impact of the two financing mechanisms in Islamic MFIs on rural households' welfare.

To identify factors that influence rural households to become clients of Islamic MFI, this chapter discussed the DCM and logit models used in this study in order to investigate determinant factors in accessing financing from Islamic MFI. The dataset and survey instruments were also discussed in this chapter.

Chapter 5

Research Results and Findings

This chapter discusses the empirical findings of the impact of financing by Islamic MFIs on the Indonesian rural households' welfare; the evaluation of *shari'a* compliance; the investigation of the impact of two financing mechanisms by Islamic MFIs and their impact on Indonesia's rural households' welfare; and the determining factors that influence Indonesia's rural households' decisions to become clients of the Islamic MFIs. The chapter is structured as follows: Section 5.1 describes the characteristics of the respondents and clients of Islamic MFIs. The characteristics of the respondents include clients and non-clients of Islamic MFIs and the characteristics of clients cover the clients with profit and loss sharing (PLS), non-PLS and mixed schemes. Section 5.2 discusses the estimated results of the welfare impact model. Section 5.3 evaluates *shari'a* compliance and discusses the Islamic values of Islamic MFIs' clients. Section 5.4 explains, compares, and contrasts the estimated welfare impact results on the clients of PLS and non-PLS finance schemes. Section 5.5 discusses the estimated results of the factors that influence Indonesia's rural households to become Islamic MFI clients. Section 5.6 presents the chapter summary.

5.1 Characteristics of respondents and clients of Islamic MFIs

5.1.1 Characteristics of respondents

This section discusses the characteristics of the surveyed respondents, both clients and non-clients of Islamic MFIs (PLS and non-PLS). The characteristics includes demographic and socio-economic attributes of the respondents. The descriptive analysis includes Chi-square and t-tests with a total of 429 respondents, consisting of 140 non-clients and 289 clients.

Table 5.1 summarises the general characteristics of the surveyed respondents. The sample comprises 185 females (43.1%) and 244 males (56.9%). Most of the rural household heads in the clients group are men (184 respondents (63.7%)); women heads of households comprise 105 respondents (36.3%). The result shows a significant difference in gender between the client and non-client groups of Islamic MFIs (χ^2 = 16.653, significant at the 1% level). This means the distribution of clients and non-clients is strongly associated with gender.

The respondents were grouped into six age categories; the dominant respondents' age group is 36-45 years (32.9%); only a few respondents were aged over 66 (3%). In the clients' group, a substantial proportion of clients were in the 36-45 years of age category (37.7%); the dominant non-client respondents were in the 26-35 years of age category (36.4%). The average age of clients and non-

clients of Islamic MFIs was significantly different at the 1% level. With regard to marital status, most respondents were married (93%), 4.7% were single, 2.1% divorced and 0.2% in a *de facto* relationship. In the client and non-client groups, most respondents were married, 95.5% and 87.9%, respectively.

In terms of the religion, Muslims dominated in both the client (98.6%) and non-client groups (97.9%). This is because Indonesia is the largest Muslim country with 87% of its population Muslim. However, there was small portion of non-Muslim respondents in the client group; there were three Protestants (1%) and one Roman Catholic (0.3%). The Chi-square test shows no significant difference in religion between the client and non-client groups, which means that the distribution of clients and non-clients was not associated with religion. Table 5.1 shows the great majority of the respondents had obtained some form of education (about 97%). The client group with high school level (40.5%) is slightly higher than that of the non-client group (39.3%). Conversely, the client group with primary school (19.7%) is slightly smaller than the non-client group (23.6%). The Chi-square test shows there is no significant difference in education level between clients and non-clients.

With regard to occupation, the occupation category in the client group is 'small entrepreneur' (37.7%), followed by crop farming (27.3%) and 'other' occupation (12.1%). In the non-client group, 'other' is dominant (32.1%) followed by small entrepreneur (30%) and crop farming (20.7%). When the respondents were asked to specify the other occupation, most of them answered, an employee in a private company. The Chi-square test shows there is a significant difference in occupation category between the client and non-client groups (χ^2 = 33.824, significant at the 1% level). This means that the distribution of clients and non-clients is highly associated with their occupation. In addition, based on the work experience of the surveyed respondents, the results show that the majority of the respondents have been working in their current job/activity for over 10 years (clients, 49.8%, non-clients, 51.4%). The difference between the means is statistically significant at the 1% level. This means that work experience also influenced the distribution of clients and non-clients.

Table 5.1 Demographic profile of the surveyed respondents.

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Demographic							
Gender							
Female	80	57.1	105	36.3	185	43.1	χ^2 =
Male	60	42.9	184	63.7	244	56.9	16.653***
Total		100.0		100.0		100.0	
Age							
18 – 25	15	10.7	10	3.5	25	5.8	
26 – 35	51	36.4	52	18.0	103	24.0	
36 – 45	32	22.9	109	37.7	141	32.9	χ^2 =
46 – 55	17	12.1	83	28.7	100.0	23.3	41.625***
56 – 65	20	14.3	27	9.3	47	11.0	
Over 66	5	3.6	8	2.8	13	3.0	
Total		100.0		100.0		100.0	
Marital status							
Single	12	8.6	8	2.8	20	4.7	
Married	123	87.9	276	95.5	399	93.0	χ^2 =
De facto relationship	0	0.0	1	0.3	1	0.2	10.041**
Divorced/Separated	5	3.6	4	1.4	9	2.1	
Total		100.0		100.0		100.0	
Religion							
Islam	137	97.9	285	98.6	422	98.4	
Protestant	3	2.1	3	1.0	6	1.4	
Roman Catholic	0	0.0	1	0.3	1	0.2	χ^2 = 1.313
Hindu	0	0.0	0	0.0	0	0.0	
Buddhist	0	0.0	0	0.0	0	0.0	
Other	0	0.0	0	0.0	0	0.0	
Total		100.0		100.0		100.0	
Education level							
No education	2	1.4	8	2.8	10	2.3	
Primary school	33	23.6	57	19.7	90	21.0	
Middle school	29	20.7	79	27.3	108	25.2	
High school	55	39.3	117	40.5	172	40.1	
Three-year college	7	5.0	7	2.4	14	3.3	χ^2 = 5.949
Bachelor degree	13	9.3	20	6.9	33	7.7	
Postgraduate	1	0.7	1	0.3	2	0.5	
Other	0	0.0	0	0.0	0	0.0	
Total		100.0		100.0		100.0	
Occupation							
Crop farming	29	20.7	79	27.3	108	25.2	
Livestock raising	1	0.7	20	6.9	21	4.9	χ^2 =
Fishery	1	0.7	1	0.3	2	0.5	33.824***
Produce processing	0	0.0	3	1.0	3	0.7	
Daily wage labourer	14	10.0	24	8.3	38	8.9	

Table 5.1 Demographic profile of the surveyed respondents (cont.).

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Demographic							
Small entrepreneur	42	30.0	109	37.7	151	35.2	
Government worker	6	4.3	16	5.5	22	5.1	
Retired	2	1.4	2	0.7	4	0.9	
Unemployed	0	0.0	0	0.0	0	0.0	
Other	45	32.1	35	12.1	80	18.6	
Total		100.0		100.0		100.0	
Work experience							
Less than 1 year	3	2.1	2	0.7	5	1.2	
1 to 5 years	38	27.1	38	13.1	76	17.7	χ^2 =
5 to 10 years	27	19.3	105	36.3	132	30.8	21.084***
10 years and above	72	51.4	144	49.8	216	50.3	
Total		100.0		100.0		100.0	
Structure of household							
Single adult living alone	1	0.7	1	0.3	2	0.5	
Couple, with child (or children)	77	55.0	246	85.1	323	75.3	
Couple, without child	6	4.3	3	1.0	9	2.1	χ^2 =
Single parent, with child (or children)	16	11.4	11	3.8	27	6.3	46.366***
Immediate and extended family members	9	6.4	7	2.4	16	3.7	
Other	31	22.1	21	7.3	52	12.1	
Total		100.0		100.0		100.0	
Number of children							
None	19	13.6	9	3.1	28	6.5	
1	41	29.3	48	16.6	89	20.7	
2	46	32.9	110	38.1	156	36.4	χ^2 =
3	20	14.3	77	26.6	97	22.6	32.630***
4	13	9.3	39	13.5	52	12.1	
More than 4	1	0.7	6	2.1	7	1.6	
Total		100.0		100.0		100.0	
Number of male children							
None	49	35.0	85	29.4	134	31.2	
1	53	37.9	127	43.9	180	42.0	
2	30	21.4	57	19.7	87	20.3	χ^2 = 5.964
3	7	5.0	16	5.5	23	5.4	
4	0	0.0	4	1.4	4	0.9	
More than 4	1	0.7	0	0.0	1	0.2	
Total		100.0		100.0		100.0	

Source: Author's calculations based on the survey questionnaire.

The survey data (Table 5.1) also show the respondents' household structure; most respondents are in the group "couple with child" (75.3%). This is true for the client (85.1%) and non-client (55%) groups. The Chi-square test indicates there is a significant difference at the 1% level between the client and non-client groups for this demographic characteristic. In terms of the number of children in the household, the dominant category for the respondents is two children (36.4%). It is the same for the client (38.1%) and non-client (32.9%) groups. The Chi-square test for the number of children is also significant at the 1% level between the two groups. This means that the distribution of clients and non-clients is associated with household structure and number of children. The number of male children in the family is also shown in Table 5.1; the dominant category is one male child (42%), followed with none (31.2%) and two male children (20.3%). A similar pattern is evident in the client group (43.9%, 29.4%, and 19.7%) and non-client group (37.9%, 35%, and 21.4%). The Chi-square test suggests no significant difference between the client and non-client groups. Therefore, the number of male children in the family is not associated with the distribution of clients and non-clients

The average household size of the respondents is three or four family members, only fewer than 5% have six or more members. Table 5.2 shows the client (51.6%) and non-client (50%) groups have the same number in the family, three to four family members. The t-test does not indicate a significant difference between the two groups. The number of income earners is divided into four groups. Based on the data, the majority of the total respondents are in the one to two income earners group (93.9%). There is a slight difference for the client and non-client groups. In the client group, 95.2% of the respondents are in the one to two income earners, but in the non-client group 91.4% are in the same income earner group. Only 0.5% of the total respondents have over six income earners in their household. The t-test does not suggest a significant difference between the client and non-client groups. This implies that there is no association between income earners in the household and the distribution of clients and non-clients.

Table 5.2 Socio-economic profile of the survey respondents.

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Socio-Economic							
Household size							
1 – 2	14	10.0	13	4.5	27	6.3	
3 – 4	70	50.0	149	51.6	219	51.0	
5 – 6	50	35.7	113	39.1	163	38.0	t = 1.542
Over 6	6	4.3	14	4.8	20	4.7	
Total		100.0		100.0		100.0	
Mean	4.19		4.42				
Income earners in household							
1 – 2	128	91.4	275	95.2	403	93.9	
3 – 4	12	8.6	12	4.2	24	5.6	t = -1.842
5 – 6	0	0.0	0	0.0	0	0.0	
Over 6	0	0.0	2	0.7	2	0.5	
Total		100.0		100.0		100.0	
Mean	1.64		1.52				
Expenditure							
Less than Rp. 12,000,000	39	27.9	44	15.2	83	19.3	
Between Rp. 12,000,001 and Rp. 15,000,000	28	20.0	33	11.4	61	14.2	
Between Rp. 15,000,001 and Rp. 20,000,000	30	21.4	65	22.5	95	22.1	χ^2 = 21.415***
Between Rp. 20,000,001 and Rp. 25,000,000	10	7.1	36	12.5	46	10.7	
Between Rp. 25,000,001 and Rp. 30,000,000	13	9.3	46	15.9	59	13.8	
Over Rp. 30,000,000	20	14.3	65	22.5	85	19.8	
Total		100.0		100.0		100.0	
Any person working as a government official							
No	128	91.4	260	90.0	388	90.4	χ^2 = 0.234
Yes	12	8.6	29	10.0	41	9.6	
Total		100.0		100.0		100.0	
Decision making							
Husband	37	26.4	134	46.4	171	39.9	
Wife	20	14.3	13	4.5	33	7.7	χ^2 = 23.004***
Both	83	59.3	142	49.1	225	52.4	
Total		100.0		100.0		100.0	

Table 5.2 Socio-economic profile of the survey respondents (cont.).

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Socio-Economic							
Food expenditure							
20%-30%	12	8.6	12	4.2	24	5.6	
30%-40%	17	12.1	42	14.5	59	13.8	
40%-50%	32	22.9	82	28.4	114	26.6	χ^2 =
50%-60%	30	21.4	91	31.5	121	28.2	23.492***
60%-70%	22	15.7	44	15.2	66	15.4	
Over 70%	27	19.3	18	6.2	45	10.5	
Total		100.0		100.0		100.0	
Health expenditure							
Less than Rp. 1,000,000	121	86.4	213	73.7	334	77.9	
Between Rp. 1,000,001 and Rp. 2,000,000	7	5.0	45	15.6	52	12.1	
Between Rp. 2,000,001 and Rp. 3,000,000	4	2.9	18	6.2	22	5.1	χ^2 = 15.468***
Between Rp. 3,000,001 and Rp. 4,000,000	2	1.4	6	2.1	8	1.9	
Between Rp. 4,000,001 and Rp. 5,000,000	1	0.7	0	0.0	1	0.2	
Over Rp. 5,000,000	5	3.6	7	2.4	12	2.8	
Total		100.0		100.0		100.0	
Farm size							
Less than 0.1 hectare	22	15.7	42	14.5	64	14.9	
Between 0.1 – 0.5 hectare	28	20.0	87	30.1	115	26.8	χ^2 = 6.025
Over 0.5 hectare	8	5.7	21	7.3	29	6.8	
Other(s)	82	58.6	139	48.1	221	51.5	
Total		100.0		100.0		100.0	

Source: Author's calculations based on the survey questionnaire.

The rural household annual income is divided into six levels, less than 12 million IDR, between 12 and 15 million IDR, between 15 and 20 million IDR, between 20 and 25 million IDR, between 25 and 30 million IDR, and over 30 million IDR (see Table 5.2). Most of the client group (52.6%) fall into the highest income level, over 30 million IDR per year compared with the non-client group (40%). Further, 1.4% of the client group is in the lowest income level (less than 12 million IDR), compared with 10% of the non-client group, which is significant at the 1% level. This implies that rural household annual income contributed significantly to the distribution of clients and non-clients.

Annual expenditure is also divided into six levels (see Table 5.2); the average annual expenditure of the total respondents is 15 to 20 million IDR (22.1%). There are two equal expenditure level

categories in the client group, between 15 and 20 million IDR (22.5%) and over 30 million IDR (22.5%). The largest non-client annual expenditure category is less than 12 million IDR level (27.9%). The difference is significant at the 1% level between the client and non-client groups. This means that household annual expenditure also influences the distribution of clients and non-clients.

In general, most of the surveyed respondents (>90%) are not government officers; only a small proportion (9.6%) of the total respondents are government officers. Based on the Chi-square test, there is no significant difference between the two groups. Table 5.1 also shows the decision making of the household. In the client group, in 49.1% of households, both the husband and wife discuss together before making their household decisions compared with 59.3% in the non-client group. Only a small proportion (4.5%) of the household decisions is made by the wife in the client group compared with 14.3% in the non-client group. The test results show the difference is significant at the 1% level between the client and non-client groups. This implies that this variable is associated with the distribution of clients and non-clients.

The food expenditure divided into six categories (in percentage) out of the respondents' total expenditure. The largest category of the total respondents spent 50-60% of their total annual expenditure on food (28.2%); only 5.6% spent 20-30% of their expenditure on food. The greatest proportion spent on food in the client group is in the 50-60% category and in the non-client group the greatest proportion is in the 40% - 50% category. In terms of health expenditure, over two thirds of the respondents (both the client or non-client groups) spent less than one million IDR per year, which is significantly different at the 1% level between the client and non-client groups. This implies that there is an influence on the food and health expenditure of respondents who become Islamic MFI clients.

In terms of farm size and holding status, most of the respondents did not own their own farm (51.5%), followed with farm size between 0.1 and 0.5 hectare (26.8%) and 14.9% less than 0.1 hectare. An identical pattern is also evident in the client and non-client groups. In the client group, those who did not own a farm accounted for 48,1%, those who owned a farm between 0.1 and 0.5 hectare (30.1%) and less than 0.1 hectare (14.5%). In the non-client group, 58.6% did not own a farm, 20% owned a farm between 0.1 and 0.5 hectare and 15.7% owned less than 0.1 hectare. Only 7.3% of the respondents in the client group had a farm over 0.5 hectare compared with 5.7% in the non-client group. There is no significant difference between the two groups based on the Chi-square test. This implies farm size is not associated with the distribution of clients and non-clients.

Table 5.3 Other characteristics of surveyed respondents.

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Knowing of Islamic MFIs in their area							
No	32	22.9	0	0.0	32	7.5	χ^2 = 71.382***
Yes	108	77.1	289	100.0	397	92.5	
Total		100.0		100.0		100.0	
Type of Islamic MFI							
(a) Islamic financial services cooperatives (KJKS)	44	40.4	98	33.7	142	35.5	
(b) Islamic financial services unit (UJKS)	0	0.0	1	0.3	1	0.3	-
(c) *Baitul Maal Wa Tamwil* (BMT)	65	59.6	192	66.0	257	64.3	
(d) Others (specify)	0	0.0	0	0.0	0	0.0	
Sub Total	109	100.0	291	100.0	400	100.0	
Reason didn't know Islamic MFI							
(a) Islamic MFIs in my township do not promote themselves	10	27.0	-	-	10	27.0	
(b) I thought all financial institutions are the same including Islamic MFIs	4	10.8	-	-	4	10.8	-
(c) I do not know if any Islamic MFIs exist in my township	20	54.1	-	-	20	54.1	
(d) It is not really important for me	3	8.1	-	-	3	8.1	
(e) Other (specify)	0	0.0	-	-	0	0.0	
Sub Total	37	100.0	-	-	37	100.0	
Kind of asset							
(a) Farm land	54	31.2	142	36.1	196	34.6	
(b) Cow/buffalo	9	5.2	22	5.6	31	5.5	
(c) Agricultural tools	24	13.9	94	23.9	118	20.8	
(d) Tractor, machinery	8	4.6	28	7.1	36	6.4	-
(e) Fishing net, boat for fishing	1	0.6	1	0.3	2	0.4	
(f) Other (specify)	77	44.5	106	27.0	183	32.3	
Sub Total	173	100.0	393	100.0	566	100.0	

Table 5.3 Other characteristics of surveyed respondents (cont.).

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Own a house							
No	1	0.7	4	1.4	5	1.2	$\chi^2 = 0.367$
Yes	139	99.3	285	98.6	424	98.8	
Total		100.0		100.0		100.0	
Kind of house							
Brick house	140	100.0	287	99.3	427	99.5	
Wooden house	0	0.0	0	0.0	0	0.0	$\chi^2 = 0.973$
Makeshift house	0	0.0	0	0.0	0	0.0	
Other	0	0.0	2	0.7	2	0.5	
Total		100.0		100.0		100.0	
Household assets							
(a) Savings	106	14.4	208	15.9	314	15.4	
(b) Motorcycle	131	17.8	271	20.8	402	19.7	
(c) Bicycle	116	15.7	142	10.9	258	12.6	
(d) Telephone	17	2.3	79	6.0	96	4.7	-
(e) Household appliances	137	18.6	278	21.3	415	20.3	
(f) Furniture	135	18.3	261	20.0	396	19.4	
(g) Other (specify)	96	13.0	67	5.1	163	8.0	
Sub Total	738	100.0	1306	100.0	2044	100.0	
Assistance from the government							
No	111	79.3	245	84.8	356	83.0	$\chi^2 = 2.013$
Yes	29	20.7	44	15.2	73	17.0	
Total		100.0		100.0		100.0	
Kind of assist							
(a) Cash subsidies	12	36.4	18	35.3	30	35.7	
(b) Inputs of agricultural production	5	15.2	14	27.5	19	22.6	
(c) Subsistence support	11	33.3	11	21.6	22	26.2	
(d) Interest-subsidised financing for poverty alleviation	1	3.0	6	11.8	7	8.3	-
(e) Subsidized housing	0	0.0	0	0.0	0	0.0	
(f) Other (specify)	4	12.1	2	3.9	6	7.1	
Sub Total	33	100.0	51	100.0	84	100.0	
Kind of agriculture							
(a) Crop farming	65	43.0	120	50.8	185	47.8	
(b) Livestock raising	13	8.6	34	14.4	47	12.1	
(c) Processing produce	1	0.7	12	5.1	13	3.4	-
(d) Fishing	3	2.0	3	1.3	6	1.6	
(e) Other (specify)	69	45.7	67	28.4	136	35.1	
Sub Total	151	100.0	236	100.0	387	100.0	

Table 5.3 Other characteristics of surveyed respondents (cont.).

	Non-Clients (N_1=140)		Clients (N_2=289)		All respondents (N=429)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count ($n=n_1+n_2$)	% of N	
Income source							
(a) Crop farming	45	27.4	105	31.5	150	30.2	
(b) Livestock raising	5	3.0	25	7.5	30	6.0	
(c) Processing produce	1	0.6	15	4.5	16	3.2	
(d) Fishing	2	1.2	3	0.9	5	1.0	
(e) Government worker	6	3.7	10	3.0	16	3.2	-
(f) Self-owned enterprise	26	15.9	96	28.8	122	24.5	
(g) Small-scale project	6	3.7	35	10.5	41	8.2	
(h) Migrant worker's wages	11	6.7	8	2.4	19	3.8	
(i) Other (specify)	62	37.8	36	10.8	98	19.7	
Sub Total	164	100.0	333	100.0	497	100.0	
Subsidiary income							
No	74	52.9	139	48.1	213	49.7	χ^2 = 0.855
Yes	66	47.1	150	51.9	216	50.3	
Total		100.0		100.0		100.0	
Source of subsidiary income							
(a) Rental of house/land	2	2.9	30	17.9	32	13.4	
(b) Teaching	4	5.7	9	5.4	13	5.5	
(c) Street selling	24	34.3	79	47.0	103	43.3	
(d) Handicrafts	5	7.1	3	1.8	8	3.4	
(e) Collecting recycled materials	1	1.4	0	0.0	1	0.4	-
(f) Poultry/fish processing	1	1.4	1	0.6	2	0.8	
(g) Rice/corn milling	2	2.9	1	0.6	3	1.3	
(h) Relief payment from government	1	1.4	3	1.8	4	1.7	
(i) Remittance from other family member	3	4.3	7	4.2	10	4.2	
(j) Other (specify)	27	38.6	35	20.8	62	26.1	
Sub Total	70	100.0	168	100.0	238	100.0	
A major loss							
No	120	85.7	209	72.3	329	76.7	χ^2 =
Yes	20	14.3	80	27.7	100.0	23.3	9.467***
Total		100.0		100.0		100.0	
Kinds of loss							
(a) Bankruptcy	1	5.0	15	18.8	16	16.0	
(b) Natural disaster	9	45.0	22	27.5	31	31.0	-
(c) Crop failure	9	45.0	33	41.3	42	42.0	
(d) Other (specify)	1	5.0	10	12.5	11	11.0	
Sub Total	20	100.0	80	100.0	100.0	100.0	

Source: Author's calculations based on the survey questionnaire.

The respondents' awareness of Islamic MFIs in their area is significantly (significant at the 1% level) associated with being classified as clients or non-clients. Table 5.3 shows that, in the client group, 100% of respondents were aware of the existence of Islamic MFIs in their area compared with the non-client group with only 77.1% being aware of the availability of Islamic MFIs.

Respondents who were aware of the availability of Islamic MFIs were asked further about what type of Islamic MFIs are available in their area. The most common is *Baitul Maal Wa Tamwil* (BMT) (64.3%), followed by Islamic financial services cooperatives (KJKS) (35.5%) and Islamic financial services units (UJKS) (0.3%). Respondents who were not aware of the availability of Islamic MFIs were asked the reason they did not know of the existence of Islamic MFIs. Most respondents answered that they did not know if any Islamic MFIs existed in their area (54.1%), followed by there is no promotion or socialization from Islamic MFIs (27%) and some thought that Islamic and conventional MFIs were the same (10.8%).

With regard to rural household assets, the largest category was 'owned farm land' (34.6%), next was 'other asset' (32.3%), which refers to a small shop or fish pond. The third category was agricultural tools (20.8%) such as a reaping hook, plough, sprayer, etc. An identical pattern was evident in both the client and non-client groups. The survey data also showed that the great majority of the respondents (98.8%) owned their house. In the non-client group, the proportion owning their own house was slightly higher (99.3%) than the client group (98.6%). The difference between the client group and non-client group is not statistically significant. Based on the survey results, most respondents had a brick house (99.5%) (client (99.3%) and non-client groups (100.0%)). The differences in this variable are not statistically significant. This implies the respondents' house holding status and type of house are not associated with the composition of clients and non-clients. Household appliances such as a television and radio, are popular household assets owned by a fifth of respondents (20.3%), followed by motorcycles (19.7%) and furniture (19.4%).

In terms of government assistance, most of the respondents received government assistance (83%). In the client group, 84.8% received assistance from the government compared with the non-client group (79.3%). The difference is not statistically significant, which means that there is no relationship between government assistance and the composition of clients and non-clients. The respondents were asked further about the kind of assistance received and over a third received cash subsidies (35.7%), followed by subsistence support such as grain, vegetables, chicken, and goats (26.2%) and, inputs for agricultural production such as fertilizer, pesticide and seeds (22.6%). The pattern is similar for the non-client group, but the client group received cash support (35.3%), followed by agricultural inputs (e.g., fertiliser, pesticide, seeds) (27.5%), and subsistence support (21.6%).

In terms of the respondents' types of farming, nearly half of the client group were crop farmers (47.8%) compared with the non-client group (43%). This activity was followed by raising livestock, which accounted for 14.4% in the client group and only 8.6% in the non-client group. The proportion of respondents with no farming activity was higher in the non-client group (45.7%) than in the client group (28.4%).

In terms of household primary income, the largest proportion of respondents' answered crop farming as their primary income source (30.2%). A similar proportion was also evident in the client group (31.5%) but in the non-client group, a higher proportion of respondents' primary income was from various sources (37.8%), mostly salary. When asked whether they had subsidiary/secondary income in their household, most clients (51.9%) answered that they had subsidiary income, but most non-clients (52.9%) did not have secondary income. The respondents were asked further about the source of their subsidiary income; street selling was the most popular source among the respondents (43.3%). Selling newspapers, fruits and cold drinks are examples of street selling.

Table 5.3 also shows that some of the respondents had experienced a major loss in the past two years. In the client group, 27.7% had been exposed to a major loss compared with the non-client group (14.3%). This difference is statistically significant at the 1% level, which means that suffering a major loss influences the composition of clients and non-clients. In addition, when the respondents were asked about the kind of losses, crop failure was the major loss in both the client (41.3%) and non-client groups (45%). This was followed by 'natural disaster', which accounted for 27.5% in the client group and 45% in the non-client group.

5.1.2 Characteristics of clients

Table 5.4 provides general information about Islamic MFIs' clients and their financing characteristics. Based on the survey, there are three groups of clients. First, clients who received profit and loss sharing (PLS) financing schemes, followed by clients who received non-PLS schemes and clients who received both PLS and non-PLS schemes. The total number of clients was 289, which consisted of 112 clients with PLS schemes, 162 clients with non-PLS schemes, and 15 clients in both schemes. In terms of the types of Islamic MFIs from which clients received maximum financing, most clients received financing from BMTs (over 60%).The Chi-square tests of the differences in both financing amounts is significant between the three groups. This is means that the maximum financing amount influenced the composition of client group (PLS, non-PLS, and mixed schemes).

The survey also investigated the total amount of financing applied for by the clients. The pattern was similar for the three groups of clients. For the PLS group, amounts between three and five million IDR dominated (30.3%) whereas in the non-PLS group, amounts between one and three million IDR were

most popular (28.8%). For clients with mixed schemes, finance amounts between seven and 15 million were the top choice (53.3%). In addition, clients were also asked about the amount of finance that they received; most clients received the amount for which they applied, the PLS group 29.4%, the non-PLS group 26.9% and the mixed group 40%. The PLS group had slightly higher amount of finance because clients with PLS schemes are usually more trusted by the Islamic MFIs. In summary, clients received the amount of finance that they wanted. The Chi-square test for amount of finance applied for is significant at the 1% level, but the amount of finance approved is significant at the 5% level for the clients with PLS, non-PLS, and with both schemes. This implies that these two variables are associated with the composition of clients in the three groups.

In order to understand the clients' purposes for borrowing, we divided their reasons into two groups. The first is for agricultural activities and the second is for non-agricultural activities. In the agricultural activities category, most borrowed money from Islamic MFIs for farm cropping activity (53.2%), followed by livestock raising (29.1%) and purchasing farm machinery (10.1%). In the non-agricultural activities, the largest group of clients applied for finance to pay off other debts (21.8%), followed by financing a small scale project (21.4%) and to start a self-run enterprise (12%).

Regarding financing duration, for most clients with a PLS scheme it was between three and six months (53.5%). For clients with a non-PLS scheme, it was between seven and 12 months (39%) and for clients in both schemes, between seven and 12 months (38.5%) and between one and two years (38.5%). These results are statistically significant at the 1% level between the three groups. This implies that financing duration contributes significantly to the clients' type of scheme. In terms of payment, most of the respondents chose monthly as their mode of payment (above 85%).

Most of clients in the three groups answered that their financing requires collateral (above 95%). In the clients with PLS schemes only 0.9% did not provide collateral, it was 4.9% for clients with non-PLS schemes and for clients with mixed schemes all provided collateral for their finance.

Table 5.4 General profile of the Islamic MFIs' clients.

	Clients with PLS (N_1=112)		Clients with non-PLS (N_2=162)		Mixed PLS and non-PLS (N_3=15)		All Clients (N=289)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
General									
Largest finance amount									
Islamic financial services cooperatives (KJKS)	45	40.2	54	33.3	0	0.0	99	34.3	
Islamic financial services unit (UJKS)	2	1.8	0	0.0	0	0.0	2	0.7	χ^2 = 13.215***
Baitul Maal Wa Tamwil (BMT)	65	58.0	108	66.7	15	100.0	188	65.1	
Other	0	0.0	0	0.0	0	0.0	0	0.0	
Total		100.0		100.0		100.0		100.0	
Total amount of finance applied for									
Less than Rp. 1,000,000	2	1.8	5	3.2	0	0.0%	7	2.5%	
Between Rp. 1,000,001 and Rp. 3,000,000	29	26.6	45	28.8	2	13.3%	76	27.1%	
Between Rp. 3,000,001 and Rp. 5,000,000	33	30.3	31	19.9	1	6.7	65	23.2	χ^2 = 23.255***
Between Rp. 5,000,001 and Rp. 7,000,000	17	15.6	15	9.6	1	6.7	33	11.8	
Between Rp. 7,000,001 and Rp. 15,000,000	19	17.4	30	19.2	8	53.3	57	20.4	
More than Rp. 15,000,000	9	8.3	30	19.2	3	20.0	42	15.0	
Sub Total	109	100.0	156	100.0	15	100.0	280	100.0	
Total amount of finance approved									
Less than Rp. 1,000,000	6	5.5	6	3.8	0	0.0	12	4.3	χ^2 = 22.019**
Between Rp. 1,000,001 and Rp. 3,000,000	28	25.7	42	26.9	2	13.3	72	25.7	

Table 5.4 General profile of the Islamic MFIs' clients (cont.).

	Clients with PLS (N_1=112)		Clients with non-PLS (N_2=162)		Mixed PLS and non-PLS (N_3=15)		All Clients (N=289)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
General									
Between Rp. 3,000,001 and Rp. 5,000,000	32	29.4	35	22.4	1	6.7	68	24.3	
Between Rp. 5,000,001 and Rp. 7,000,000	18	16.5	14	9.0	1	6.7	33	11.8	
Between Rp. 7,000,001 and Rp. 15,000,000	15	13.8	26	16.7	6	40.0	47	16.8	χ^2 = 22.019**
More than Rp. 15,000,000	10	9.2	33	21.2	5	33.3	48	17.1	
Sub Total	109	100.0	156	100.0	15	100.0	280	100.0	
Total amount of applied for finance approved									χ^2 = 2.995
No	22	20.2	38	24.4	6	40.0	66	23.6	
Yes	87	79.8	118	75.6	9	60.0	214	76.4	
Sub Total	109	100.0	156	100.0	15	100.0	280	100.0	
Purpose for agricultural activities									
(a) Farm cropping	22	61.1	20	50.0	0	0.0	42	53.1	
(b) Livestock raising	10	27.8	11	27.5	2	66.7	23	29.1	
(c) Produce processing	1	2.8	3	7.5	0	0.0	4	5.1	
(d) Purchase of farming machinery	2	5.6	5	12.5	1	33.3	8	10.2	-
(e) Other (specify)	1	2.8	1	2.5	0	0.0	2	2.5	
Sub Total	36	100.0	40	100.0	3	100.0	79	100.0	
Purpose for non-agricultural activities									
(a) To start a self-run enterprise	13	14.8	14	10.1	1	12.5	28	12.0	-
(b) To finance an existing enterprise	2	2.3	9	6.5	2	25.0	13	5.6	

Table 5.4 General profile of the Islamic MFIs' clients (cont.).

	Clients with PLS (N_1=112)		**Clients with non-PLS** (N_2=162)		**Mixed PLS and non-PLS** (N_3=15)		**All Clients** (N=289)		**Statistical Test**
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
General									
(c) To finance a small-scale project	16	18.2	32	23.2	2	25.0	50	21.4	
(d) Basic household needs	13	14.8	11	8.0	1	12.5	25	10.7	
(e) To pay for children's education	7	8.0	13	9.4	0	0.0	20	8.5	
(f) Emergency	7	8.0	10	7.2	0	0.0	17	7.3	
(g) Housing	5	5.7	12	8.7	0	0.0	17	7.3	
(h) Paying off other debts	23	26.1	27	19.6	1	12.5	51	21.8	
(i) Other (specify)	2	2.3	10	7.2	1	12.5	13	5.6	
Sub Total	88	100.0	138	100.0	8	100.0	234	100.0	
Duration financing									
3 to 6 months	53	53.5	43	29.5	3	23.1	99	38.4	
7 to 12 months	26	26.3	57	39.0	5	38.5	88	34.1	
1 to 2 years	18	18.2	33	22.6	5	38.5	56	21.7	χ^2 = 21.142***
2 to 3 years	2	2.0	8	5.5	0	0.0	10	3.9	
More than 3 years	0	0.0	5	3.4	0	0.0	5	1.9	
Sub Total	99	100.0	146	100.0	13	100.0	258	100.0	
Financing payment frequency									
Weekly	4	4.0	8	5.5	0	0.0	12	4.7	
Monthly	92	92.9	126	86.3	12	92.3	230	89.1	
Semi-annually	1	1.0	8	5.5	1	7.7	10	3.9	χ^2 = 6.668
Annually	0	0.0	2	1.4	0	0.0	2	0.8	
Other	2	2.0	2	1.4	0	0.0	4	1.6	
Sub Total	99	100.0	146	100.0	13	100.0	258	100.0	
Require collateral									
No	1	0.9	8	4.9	0	0.0	9	3.1	χ^2 = 4.100
Yes	111	99.1	154	95.1	15	100.0	280	96.9	
Total		100.0		100.0		100.0		100.0	

Table 5.4 General profile of the Islamic MFIs' clients (cont.).

	Clients with PLS (N_1=112)		Clients with non-PLS (N_2=162)		Mixed PLS and non-PLS (N_3=15)		All Clients (N=289)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
General									
Kind of collateral									
(a) Mortgage property	30	27.0	12	7.8	1	7.7	43	15.5	
(b) Chattels mortgage	76	68.5	121	78.6	12	92.3	209	75.2	
(c) Promissory note	0	0.0	0	0.0	0	0.0	0	0.0	-
(d) Co-signer/co-guarantor	0	0.0	2	1.3	0	0.0	2	0.7	
(e) Deposits	1	0.9	17	11.0	0	0.0	18	6.5	
(f) Others (specify)	4	3.6	2	1.3	0	0.0	6	2.2	
Sub Total	111	100.0	154	100.0	13	100.0	278	100.0	
Status of payment									
Fully paid	14	14.3	19	13.1	1	7.7	34	13.3	χ^2 = 0.653
Current	83	84.7	125	86.2	12	92.3	220	85.9	
Past due	1	1.0	1	0.7	0	0.0	2	0.8	
Restructured	0	0.0	0	0.0	0	0.0	0	0.0	
Sub Total	98	100.0	145	100.0	13	100.0	256	100.0	
Take of process									
Less than a week	102	91.1	123	76.9	9	60.0	234	81.5	
1 week	5	4.5	17	10.6	5	33.3	27	9.4	χ^2 = 24.975***
2 weeks	2	1.8	17	10.6	0	0.0	19	6.6	
3 weeks	3	2.7	3	1.9	1	6.7	7	2.4	
1 Month	0	0.0	0	0.0	0	0.0	0	0.0	
More than a month	0	0.0	0	0.0	0	0.0	0	0.0	
Sub Total	112	100.0	160	100.0	15	100.0	287	100.0	
Having savings in Islamic MFI									
No	32	28.8	25	15.4	0	0.0	57	19.8	
Yes	79	71.2	137	84.6	15	100.0	231	80.2	χ^2 = 11.351***
Sub Total	111	100.0	162	100.0	15	100.0	288	100.0	

Table 5.4 General profile of the Islamic MFIs' clients (cont.).

	Clients with PLS (N_1=112)		Clients with non-PLS (N_2=162)		Mixed PLS and non-PLS (N_3=15)		All Clients (N=289)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
General									
Distance to the nearest Islamic MFI									
1 - 5 kilometres	72	64.3	97	60.2	7	46.7	176	61.1	
6 - 10 kilometres	39	34.8	61	37.9	7	46.7	107	37.2	
11 - 15 kilometres	0	0.0	3	1.9	0	0.0	3	1.0	
16 - 20 kilometres	1	0.9	0	0.0	1	6.7	2	0.7	χ^2 = 12.521*
Over 20 kilometres	0	0.0	0	0.0	0	0.0	0	0.0	
Sub Total	112	100.0	161	100.0	15	100.0	288	100.0	
Any charge(s) for financing									
No	2	1.8	1	0.6	0	0.0	3	1.0	
Yes	110	98.2	161	99.4	15	100.0	286	99.0	χ^2 = 1.046
Total		100.0		100.0		100.0		100.0	
Kind of charge									
(a) Admin or service fee	110	100.0	161	98.8	15	100.0	286	99.3	
(b) Insurance fee	0	0.0	0	0.0	0	0.0	0	0.0	
(c) Guarantee fee	0	0.0	0	0.0	0	0.0	0	0.0	
(d) Legal fee	0	0.0	2	1.2	0	0.0	2	0.7	-
(e) Other (specify)	0	0.0	0	0.0	0	0.0	0	0.0	
Sub Total	110	100.0	163	100.0	15	100.0	288	100.0	
Informal Cost									
No	112	100.0	162	100.0	15	100.0	289	100.0	
Yes	0	0.0	0	0.0	0	0.0	0	0.0	-
Total		100.0		100.0		100.0		100.0	

Source: Author's calculations based on the survey questionnaire.

With regard to the type of collateral provided by the clients, over 60% of the three groups of clients used chattel mortgages, especially motorcycles, as their collateral. Similarly, over 80% of the three group of clients' payment status was still current and 0.8% status was past due.

Table 5.4 also compares the processing time for financing between clients with PLS, non-PLS, and mixed schemes. The results show that 91.1% of clients with PLS schemes obtained financing from an Islamic MFI in less than a week after submitting their application compared with 76.9% of clients with non-PLS schemes and 60% for clients with mixed schemes. This shows that, on average, Islamic MFIs

take a short time to process the clients' loan applications. There is a statistically significant difference for this variable between the three groups (significant at the 1% level). This implies that the finance application process time is associated with the type of scheme.

In terms of saving with an Islamic MFI, about 71.2% of the clients in the PLS schemes have been saving with Islamic MFIs. This is slightly lower than clients with non-PLS schemes (84.6%). All clients in both schemes group have been saving with an Islamic MFI. The differences are statistically significant at the 1% level. This means that saving with an Islamic MFI influences the type of finance scheme in Islamic MFIs.

Table 5.4 also summarises the distance of clients' residence from an Islamic MFI in their area. There were five distance levels: one to five kilometres, six to 10 kilometres, 11 to 15 kilometres, 16 to 20 kilometres, and over 20 kilometres. The clients in PLS (64.3%) and non-PLS (60.2%) schemes exhibited similar results; their distance was between one and five kilometres from the nearest Islamic MFI. However, there are two levels of distance that have equally high proportions of clients in both schemes: one to five kilometres (46.7%) and six to 10 kilometres (46.7%). The differences are statistically significant at the 10% level. This implies that the distance to the nearest Islamic MFI influences the distribution of the type of scheme.

In terms of additional charge(s) by Islamic MFIs for clients' financing applications, almost all clients (over 95%) in the three groups experienced additional charges for their financing. The additional charge on clients in the three groups was mostly an administration or service fee (>98%). Furthermore, when clients were asked about the existence of any informal cost when they applied for finance, all clients in three groups replied that there was no informal fee for Islamic MFIs' officers when they submitted their applications.

Table 5.5 Government assistance to Islamic MFIs' clients.

	Clients with PLS (N_1=112)		Clients with non-PLS (N_2=162)		Mixed PLS and non-PLS (N_3=15)		All Clients (N=289)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
Government Assistance									
Assistance from the gov. after finance									χ^2 = 1.450
No	101	90.2	141	87.6	12	80.0	254	88.2	
Yes	11	9.8	20	12.4	3	20.0	34	11.8	
Sub Total	112	100.0	161	100.0	15	100.0	288	100.0	
Kind of assistance									
(a) Financial support	6	46.2	13	61.9	1	25.0	20	52.6	
(b) Skill/ technical support	3	23.1	5	23.8	0	0.0	8	21.1	
(c) Religious support	2	15.4	1	4.8	1	25.0	4	10.5	-
(d) Other (specify)	2	15.4	2	9.5	2	50.0	6	15.8	
Sub Total	13	100.0	21	100.0	4	100.0.0	38	100.0	
Frequency of assistance									
Once	9	81.8	13	65.0	1	33.3	23	67.6	
Twice	2	18.2	5	25.0	2	66.7	9	26.5	
Three times	0	0.0	0	0.0	0	0.0	0	0.0	χ^2 = 4.402
Over three times	0	0.0	2	10.0	0	0.0	2	5.9	
Sub Total	11	100.0	20	100.0	3	100.0	34	100.0	
Assistance beneficial									
No	1	9.1	0	0.0	0	0.0	1	2.9	χ^2 = 2.154
Yes	10	90.9	20	100.0.0	3	100.0.0	33	97.1	
Sub Total	11	100.0	20	100.0	3	100.0	34	100.0	
Benefit									
(a) I improved my financial skills.	0	0.0	5	18.5	0	0.0	5	11.6	
(b) I improved my business knowledge.	5	38.5	7	25.9	1	33.3	13	30.2	-
(c) I improved my spiritual/moral knowledge	2	15.4	1	3.7	0	0.0	3	7.0	

Table 5.5 Government assistance to Islamic MFIs' clients (cont.).

	Clients with PLS (N_1=112)		Clients with non-PLS (N_2=162)		Mixed PLS and non-PLS (N_3=15)		All Clients (N=289)		Statistical Test
	Count (n_1)	% of N_1	Count (n_2)	% of N_2	Count (n_3)	% of N_3	Count ($n=n_1+n_2+n_3$)	% of N	
Government Assistance									
Benefit									
(d) There is a chance to get a future grant.	4	30.8	8	29.6	2	66.7	14	32.6	
(e) I have a bigger network (more friends).	0	0.0	1	3.7	0	0.0	1	2.3	
(f) Other (specify)	2	15.4	5	18.5	0	0.0	7	16.3	
Sub Total	13	100.0	27	100.0	3	100.0	43	100.0	

Source: Author's calculations based on the survey questionnaire.

This study also investigated the Indonesian government's support for Islamic MFIs' clients during their financing period. The survey results show that only 34 (11.8%) of the clients received assistance and support from the government. This includes 20% of clients in both schemes, followed by clients in non-PLS schemes (12.4%) and PLS schemes (9.8%). Most government assistance was financial (52.6%), followed by skill/technical support (21.1%); only 10.5% of clients received religious support (see Table 5.5).

With regard to the frequency of government assistance that clients received, over half of the clients in both schemes received help twice (66.7%) followed by the clients in the PLS (81.8%); non-PLS (65%) scheme clients received help only once. In addition, when respondents were asked whether the assistance brought benefit to them, most (97.1%) replied that the support helped their household. Moreover, they also believed that once they received assistance or support from the government, it meant that they will have a better chance to get future assistance (32.6%). Another benefit was that the clients felt that the support could increase their business knowledge (30.2%).

Table 5.6 General information about non-clients.

Variable	Non-Clients	Count	%
Any intention to borrow in the future	No	86	61.4
	Yes	54	38.6
	Total	140	100.0
Intend to borrow from	Formal financial institution	51	94.4
	Informal financial institution	0	0.0
	Both Sources	3	5.6
	Total	54	100.0
Any intention to borrow from an Islamic MFI	No	53	54.1
	Yes	45	45.9
	Total	98	100.0
Reasons for not borrowing from an Islamic MFI	Insufficient income/assets	6	11.8
	Incurred previous financing(s) or bad financing record	2	3.9
	Have no collateral	2	3.9
	Have difficulty in completing the required documents	1	2.0
	Islamic MFIs' financing application process takes too much time	0	0.0
	I could access informal institutions much more easily	2	3.9
	Islamic MFIs charge higher costs	2	3.9
	Other(s), please specify	36	70.6
	Total	51	100.0

Source: Author's calculations based on the survey questionnaire.

Table 5.6 provides general information about non-clients. When non-clients were asked about their future borrowing intentions, about 61.4% did not have any intention to borrow money in the future; only 54 (38.6%) had any intention to borrow money in the future. Of the 54 respondents in non-client rural households, 51 intended to borrow from formal financial institutions (94.4%) and three intended to borrow from both formal and informal financial institutions.

The non-clients were also asked about any possibility of their borrowing from Islamic MFIs in the future. The survey result shows 54.1% of the respondents replied they did not intend to borrow from Islamic MFIs and 45 (45.9%) intend to borrow money from Islamic MFIs. When we asked the reason why they did not want to borrow from Islamic MFIs, most stated reasons other than those already listed on the questionnaire; most replied that they did not really understand the borrowing mechanism for Islamic MFIs (70.6%).

5.2 Impact of Islamic MFIs' financing on rural household welfare

The indicator of rural households' welfare in this research used two parameters, income and expenditure. Using the difference-in-difference (DID) method, this study assessed the impact of financing from Islamic MFIs on rural households' welfare in Indonesia. The empirical results are discussed in Sections 5.2.1 and 5.2.2. There are two groups in standard DID estimation: (1) clients

who indicated that they received financing from an Islamic MFI; and (2) non-clients who did not receive financing from an Islamic MFI.

5.2.1 Welfare estimation with the standard difference-in-difference approach

In the standard DID analysis, the treatment variable (M_{it}) is a binary variable that indicates a rural household's membership as a client and who received financing from an Islamic MFI (1 = yes, 0 = otherwise). Because the estimated model is a logarithmic function where the dependent variable is a natural logarithm of the clients' welfare indicator (income and expenditure), the coefficient (γ) of the treatment variable, when multiplied by 100.0, measures the approximate average percentage change in the indicator with respect to the treatment variable (Li et al., 2011b).

The results of the standard DID show that rural household welfare measured by rural household annual income (RHAI) and rural household annual expenditure (RHAE) significantly improved when they borrowed from Islamic MFIs (see column 3, Table 5.7). The average RHAI for clients (borrowers) rose 12% over two years, which is statistically significant at the 1% level. Positive and significant improvement is also evident in the RHAE of the borrowers in the same period. The average RHAE for the borrowers rose 10.2% over two years, which is also statistically significant at the 1% level.

To measure the true impact of financing by Islamic MFIs, the average outcome difference for non-clients (or non-borrowers) between 2012 and 2014 (see column 6, Table 5.7) is used to approximate the time trend suffered by the clients. After differencing the means of the standard DID between clients and non-clients, the average RHAI for the clients rose significantly by 2.8% as a direct impact of financing by Islamic MFIs (significant at the 1% level) (see column 7, Table 5.7). However, the results show that the average RHAE of clients decreased 1.4% but the result is insignificant.

Based on the standard DID estimation (see column 7, Table 5.7), the impact of Islamic MFIs' financing on the clients' annual income is positive and significant at the 1% level. However, the impact of financing on clients' annual expenditure is negative but insignificant. The standard DID estimation assumes that only the treatment variables impact rural households' outcomes (Y_{it}) between the clients and non-clients.

Considering the differences and imbalance in the households' characteristics of the two groups of respondents and the possible association with Y_{it}, the standard DID approach can lead to a biased impact estimated results. Therefore, it is important to estimate the DID equation with control variables.

Table 5.7 Standard DID estimates of Islamic MFIs' financing impact of rural household welfare.

Outcome Variables	Clients (n_1 = 289)			Non-Clients (n_2 = 140)			***DID impact estimator***
	Year 2012	Year 2014	*Difference* (D1)	Year 2012	Year 2014	*Difference* (D0)	
	Yc_{12}	Yc_{14}	D1 = $Yc_{14} - Yc_{12}$	Ync_{12}	Ync_{14}	D0 = $Ync_{14} - Ync_{12}$	DID1 = D1 – D0
Log of annual income	7.4326 (0.01735)	7.5531 (0.01792)	0.1205*** (0.00472)	7.3434 (0.02878)	7.4355 (0.02765)	0.0920*** (0.01240)	0.02846*** (0.01097)
Log of annual expenditure	7.2250 (0.01578)	7.3273 (0.01593)	0.1023*** (0.00444)	7.0904 (0.02641)	7.2069 (0.02382)	0.1164*** (0.01160)	-0.01408 (0.01028)

Note: Entries represent means of log household annual income and log household annual expenditure for the client and non-client groups;
Numbers in parentheses are standard errors;
*, **, *** represent the 10%, 5%, 1% significance levels, respectively;
Source: Author's calculations based on the survey questionnaire.

5.2.2 Welfare estimation with the adjusted difference-in-difference approach

In order to minimize any biased impact estimation and to control for the households' unobserved heterogeneities, this study evaluates the welfare impact using the adjusted DID method with fixed effect regression[31] and robustness test. Table 5.8 presents the adjusted DID results with the treatment variable (M_{it}) as a binary variable that indicates Islamic MFI clients. The fixed effect robustness test is used to further test the validity of the results.

Table 5.8 shows that clients, on average, increased their annual income by 6.82% compared with non-clients, which is positive and significant at the 1% level. However, the RHAE for clients decreased by 3.94% compared with non-clients which is significant at the 10% level. Major loss as a control variable also exhibited a positive significant relationship with rural households' expenditure (significant at the 5% level).

In addition, the robustness test shows that the impact of financing remained the same (6.82%), however, it is now significant at the 5% level. The result for RHAE becomes insignificant. The control variable shows the same result but it is now significant only at the 10% level. Overall, the explanatory power of the fixed effects model is adequate (see R^2, Table 5.8). The F-statistics are also significant at the 1% level; therefore, this strongly rejects the null hypothesis of the fixed effects model in

[31]Hausman test for Clients vs Non Clients: (Prob>chi2) for income and expenditure models are 0. 0271 and 0.000, which is means that it is recommended to use the Fixed Effect.

minimizing the selection bias in impact estimation. This implies that rural households may increase their income after received financing from Islamic MFI, and this finding is parallel with the previous studies by Li et al. (2011b) and Kondo et al. (2008).

Table 5.8 Fixed effect estimation of the impact of financing on rural household welfare.

	Dependent Variable			
Variable	**RHAI**	**Robust RHAI**	**RHAE**	**Robust RHAE**
Intercept	17.04735***	17.04735***	16.5351***	16.5351***
	(0.0083831)	(0.0059243)	(0.0078278)	(0.0055319)
Year dummy $(d2_t)$	0.214824***	0.214824***	0.2606674***	0.2606674***
	(0.0211449)	(0.0277365)	(0.0197442)	(0.0253253)
Control Variables (X_{it})				
Major Loss dummy	-0.0199272	-0.0199272	0.0524685**	0.0524685*
(ML)	(0.0283548)	(0.0316963)	(0.0264765)	(0.0315925)
Treatment Variables (M_{it})				
Clients (M)	0.0682121***	0.0682121**	-0.0394621*	-0.0394621
	(0.0255689)	(0.0317391)	(0.0238752)	(0.029803)
F Statistic	157.99***	237.53***	166.96***	211.85***
Household Fixed Effect	Jointly significant	Jointly significant	Jointly significant	Jointly significant
R-squared	0.5266	0.5266	0.5404	0.5404
Total Observation	858	858	858	858

Note: Numbers in parentheses are standard errors;
*, **, *** represent the 10%, 5%, 1% significance levels;
Source: Author's calculations based on the survey questionnaire.

5.3 Islamic values and *shari'a* compliance evaluation

There are limited studies that investigate *shari'a* compliance in Islamic financial institutions (IFIs) especially in Islamic MFIs. To date, no study has investigated *shari'a* compliance in Islamic MFIs. Vinnicombe (2010) investigated *shari'a* compliance from 26 full flagged Islamic banks licensed in Bahrain. The study evaluated *shari'a* compliance based on data derived from annual reports and compared with the standard set by AAOIFI. Using a benchmark index, the study found that compliance for *murabahah* contracts was very high but for *zakah* and the *mudarabah* contracts it was relatively low (Vinnicombe, 2010).

With regard to previous studies on Islamic values' evaluation, Rahman (2010b) study estimated the ethical and moral changes of clients in Islamic microfinance programme in Bangladesh based on their opinion. The study used a four-point Likert scale and 10 statements of religious activities to construct an index of acceptability to measure the influence of the programme on changes in clients' religious activity. The author concluded that the Islamic microfinance programme in Bangladesh has a positive impact on the ethics and morality of clients.

The *shari'a* compliance indicator in this study uses *shari'a* standards from the literature for all schemes combined with the standards from Indonesia's *shari'a* board. The Islamic values' evaluation in this study covers values such as those that respondents believe and implement in their life and that they know about Islamic MFIs. The questions also asked the clients' opinions on *shari'a* compliance and their financing experiences.

Table 5.9 Islamic values evaluation.

	Clients with PLS		Clients with Non-PLS		Mixed PLS and Non-PLS		All Clients		Statistical Test
Islamic Values									
(1) My spiritual beliefs affect every aspect of my life including my financial activities									
1 Strongly disagree	12	10.7%	18	11.1%	1	6.7%	31	10.7%	
2 Disagree	8	7.1%	10	6.2%	5	33.3%	23	8.0%	
3 Somewhat disagree	15	13.4%	19	11.7%	3	20.0%	37	12.8%	
4 Neutral	10	8.9%	6	3.7%	0	0.0%	16	5.5%	χ^2 = 25.807**
5 Somewhat agree	12	10.7%	22	13.6%	2	13.3%	36	12.5%	
6 Agree	28	25.0%	30	18.5%	0	0.0%	58	20.1%	
7 Strongly agree	27	24.1%	57	35.2%	4	26.7%	88	30.4%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(2) My spiritual beliefs play an important role before I decided to borrow									
1 Strongly disagree	5	4.5%	5	3.1%	1	6.7%	11	3.8%	
2 Disagree	6	5.4%	18	11.1%	1	6.7%	25	8.7%	
3 Somewhat disagree	17	15.2%	19	11.7%	4	26.7%	40	13.8%	
4 Neutral	21	18.8%	13	8.0%	0	0.0%	34	11.8%	χ^2 = 16.559
5 Somewhat agree	27	24.1%	37	22.8%	4	26.7%	68	23.5%	
6 Agree	24	21.4%	44	27.2%	3	20.0%	71	24.6%	
7 Strongly agree	12	10.7%	26	16.0%	2	13.3%	40	13.8%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(3) I always consider my spiritual beliefs before I make any decision on my financial activities									
1 Strongly disagree	2	1.8%	4	2.5%	2	13.3%	8	2.8%	
2 Disagree	11	9.8%	16	9.9%	3	20.0%	30	10.4%	
3 Somewhat disagree	21	18.8%	22	13.6%	1	6.7%	44	15.2%	
4 Neutral	16	14.3%	11	6.8%	0	0.0%	27	9.3%	χ^2 = 17.278
5 Somewhat agree	30	26.8%	42	25.9%	2	13.3%	74	25.6%	
6 Agree	18	16.1%	40	24.7%	5	33.3%	63	21.8%	
7 Strongly agree	14	12.5%	27	16.7%	2	13.3%	43	14.9%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(4) I always follow the guidance of the scholars of my spiritual beliefs in my financial activities									
1 Strongly disagree	8	7.1%	6	3.7%	3	20.0%	17	5.9%	χ^2 =
2 Disagree	3	2.7%	14	8.6%	2	13.3%	19	6.6%	20.168*

Table 5.9 Islamic values evaluation (cont.).

	Clients with PLS		Clients with Non-PLS		Mixed PLS and Non-PLS		All Clients		Statistical Test
Islamic Values									
(4) I always follow the guidance of the scholars of my spiritual beliefs in my financial activities									
3 Somewhat disagree	24	21.4%	19	11.7%	0	0.0%	43	14.9%	
4 Neutral	20	17.9%	30	18.5%	1	6.7%	51	17.6%	
5 Somewhat agree	21	18.8%	33	20.4%	3	20.0%	57	19.7%	χ^2 = 20.168*
6 Agree	26	23.2%	39	24.1%	4	26.7%	69	23.9%	
7 Strongly agree	10	8.9%	21	13.0%	2	13.3%	33	11.4%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(5) I always use financial products that parallel my spiritual beliefs even if they are more expensive or more sophisticated									
1 Strongly disagree	6	5.4%	10	6.2%	1	6.7%	17	5.9%	
2 Disagree	7	6.3%	14	8.6%	2	13.3%	23	8.0%	
3 Somewhat disagree	19	17.0%	33	20.4%	2	13.3%	54	18.7%	
4 Neutral	10	8.9%	24	14.8%	1	6.7%	35	12.1%	χ^2 = 6.454*
5 Somewhat agree	35	31.3%	39	24.1%	3	20.0%	77	26.6%	
6 Agree	26	23.2%	27	16.7%	4	26.7%	57	19.7%	
7 Strongly agree	9	8.0%	15	9.3%	2	13.3%	26	9.0%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(6) Most of Islamic MFIs' schemes in Indonesia fulfil the Indonesia shari'ah supervisory board standards									
1 Strongly disagree	6	5.4%	3	1.9%	2	13.3%	11	3.8%	
2 Disagree	3	2.7%	9	5.6%	3	20.0%	15	5.2%	
3 Somewhat disagree	7	6.3%	17	10.5%	2	13.3%	26	9.0%	
4 Neutral	12	10.7%	25	15.4%	2	13.3%	39	13.5%	χ^2 = 26.881***
5 Somewhat agree	36	32.1%	30	18.5%	1	6.7%	67	23.2%	
6 Agree	36	32.1%	52	32.1%	2	13.3%	90	31.1%	
7 Strongly agree	12	10.7%	26	16.0%	3	20.0%	41	14.2%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(7) I believe the Indonesian shari'ah supervisory board always monitors Islamic MFIs' products and services									
1 Strongly disagree	1	0.9%	4	2.5%	1	6.7%	6	2.1%	
2 Disagree	8	7.1%	12	7.4%	5	33.3%	25	8.7%	
3 Somewhat disagree	5	4.5%	16	9.9%	3	20.0%	24	8.3%	χ^2 = 23.185**
4 Neutral	17	15.2%	23	14.2%	2	13.3%	42	14.5%	
5 Somewhat agree	22	19.6%	30	18.5%	2	13.3%	54	18.7%	

Table 5.9 Islamic values evaluation (cont.).

	Clients with PLS		Clients with Non-PLS		Mixed PLS and Non-PLS		All Clients		Statistical Test
Islamic Values									
(7) I believe the Indonesian shari'ah supervisory board always monitors Islamic MFIs' products and services									
6 Agree	38	33.9%	50	30.9%	1	6.7%	89	30.8%	χ^2 = 23.185**
7 Strongly agree	21	18.8%	27	16.7%	1	6.7%	49	17.0%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(8) Islamic MFIs always clearly describe their products and services to their clients									
1 Strongly disagree	2	1.8%	3	1.9%	1	6.7%	6	2.1%	
2 Disagree	5	4.5%	7	4.3%	1	6.7%	13	4.5%	
3 Somewhat disagree	5	4.5%	21	13.0%	3	20.0%	29	10.0%	
4 Neutral	7	6.3%	8	4.9%	0	0.0%	15	5.2%	χ^2 = 16.365
5 Somewhat agree	29	25.9%	29	17.9%	4	26.7%	62	21.5%	
6 Agree	42	37.5%	48	29.6%	2	13.3%	92	31.8%	
7 Strongly agree	22	19.6%	46	28.4%	4	26.7%	72	24.9%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(9) If there is any dispute, I believe Islamic MFIs will take reasonable attempts that parallel Islamic values to resolve the problems									
1 Strongly disagree	3	2.7%	5	3.1%	0	0.0%	8	2.7%	
2 Disagree	3	2.7%	2	1.2%	2	13.3%	7	2.4%	
3 Somewhat disagree	6	5.4%	13	8.0%	4	26.7%	23	8.0%	
4 Neutral	7	6.3%	12	7.4%	0	0.0%	19	6.6%	χ^2 = 20.251*
5 Somewhat agree	26	23.2%	39	24.1%	1	6.6%	66	22.8%	
6 Agree	43	38.3%	55	34.0%	4	26.7%	102	35.3%	
7 Strongly agree	24	21.4%	36	22.2%	4	26.7%	64	22.2%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	
(10) I believe the aim of Islamic MFIs is not only profit oriented but also to help people and spread Islamic values									
1 Strongly disagree	3	2.7%	2	1.2%	0	0.0%	5	1.7%	
2 Disagree	1	.9%	7	4.3%	3	20.0%	11	3.8%	
3 Somewhat disagree	8	7.1%	8	4.9%	2	13.3%	18	6.2%	
4 Neutral	8	7.1%	10	6.2%	0	0.0%	18	6.2%	χ^2 = 19.377*
5 Somewhat agree	20	17.9%	33	20.4%	2	13.3%	55	19.0%	
6 Agree	39	34.8%	45	27.8%	4	26.7%	88	30.4%	
7 Strongly agree	33	29.5%	57	35.2%	4	26.7%	94	32.5%	
Total	112	100.0%	162	100.0%	15	100.0%	289	100.0%	

Source: Author's calculations based on the survey questionnaire.

Table 5.9 summarises the Islamic values of clients based on their financing mechanism: clients in PLS, clients in non-PLS, and clients in both schemes. The survey used a 7 point Likert scale (1= strongly disagree, 7 = strongly agree) for each Islamic values statement. The first statement asked whether the clients' spiritual beliefs affected every aspect of their life including financial activities; most clients agreed with the statement (most chose 6 or above). The result for this first statement is statistically significant at the 5% level between the three groups of clients. The second statement asked about the relationship between spiritual beliefs and their decision to borrow money. Nearly a quarter of clients gave a score of 6 (24.6%), with 23.5% scoring 5 and 13.8% scoring 7. This means that clients have an understanding of Islamic values and that the values influenced their behaviour. The result differences for the second statement are not statistically significant between the three groups.

With the third statement, just over a quarter of clients in the PLS (26.8%) and in non-PLS (25.9%) schemes gave a score of 5 to represent their behaviour. However, one third of clients in both schemes gave a score 6 (33.3%). The third statement investigates whether the clients always considered their spiritual beliefs before they make any decision on their financial activities. Based on the results, most clients did some self-reflection on their spiritual beliefs before taking any decision on their financial activities. The result is not statistically significant between the three groups.

The fourth statement cross-checked the clients' self-values with their behaviour. The statement was "I always follow the guidance of the scholars of my spiritual beliefs in my financial activities"; nearly a quarter of the clients gave a score of 6 (23.9%), which indicates they always listen and follow the guidance from their spiritual leader. The result is statistically significant at the 10% level between the three groups of clients.

The fifth statement asked the clients' financial choices related to their spiritual values. The statement was "I always use financial products that are parallel with my spiritual beliefs even if they are more expensive or more sophisticated". For this, just over a quarter of the clients (26.6%) gave a score of 5, which means that they practise their spiritual beliefs. The result is statistically significant at the 10% level between the three groups. The next two statements asked about clients' knowledge of *shari'a* compliance in Islamic MFIs. The statement asked whether most Islamic MFIs' schemes in Indonesia fulfil the Indonesia's *shari'a* supervisory board standards. Nearly a third of the clients (31.1%) agreed with this statement.

This result implies that Islamic MFI's clients felt satisfied with the *shari'a* compliance aspect of Islamic MFI's products and services. The result is statistically significant at the 1% level between the three groups of clients. Further on *shari'a* compliance, the statement investigated the clients' knowledge of the *shari'a* board and its duty to monitor Islamic MFIs' products and services. The result shows that

nearly a third of the clients agreed with this statement (30.8% and a score of 6), which means that the clients believed in the performance of the *shari'a* supervisory board to ensure *shari'a* compliance in Islamic MFIs' products and services. The result is statistically significant at the 5% level between the three groups of clients.

Statements eight to ten focussed more on operational aspects of Islamic MFIs and the respondents' experiences when using Islamic MFI products. Statement eight investigated the clients' experiences with the Islamic MFIs' officers regarding the terms and conditions and the clarity when they received finance from an Islamic MFI. Nearly a third of the clients (31.8%) gave a score of six which implies that they agree that Islamic MFIs' officers always clearly describe the terms and conditions and the clarity of the products and services. The result is not statistically significant.

The next statement questioned the clients' confidence in Islamic MFIs, especially if a dispute occurred during the financing period. Interestingly, over a third of the clients (35.3%) gave a score of six which implied they believe if a dispute occurs, Islamic MFIs will make reasonable attempts that parallel with Islamic values to resolve the problem. The result is statistically significant at the 10% level.

Finally, the tenth statement investigates the clients' knowledge of Islamic MFIs. The statement focused on the aim of Islamic MFIs. Nearly a third of the clients (32.5%) strongly agreed that the aim of an Islamic MFI is not only profit but that it is also to help people (social) and to spread Islamic values. The result is statistically significant at the 10% level.

Table 5.10 Summary of Islamic values evaluation (mean score).

Islamic Values	Mean score			
	Clients PLS	Clients Non-PLS	Mixed PLS & Non-PLS	All Clients
1. My spiritual beliefs affect every aspect of my life including my financial activities.	4.73	4.98	3.86	4.83
2. My spiritual beliefs play an important role before I decided to borrow.	4.59	4.82	4.46	4.71
3. I always consider my spiritual beliefs before I make any decision on my financial activities.	4.52	4.84	4.33	4.69
4. I always follow the guidance of the scholars of my spiritual beliefs in my financial activities.	4.43	4.67	4.26	4.56

Table 5.10 Summary of Islamic values evaluation (mean scores) (cont.).

Islamic Values	Mean score			
	Clients PLS	Clients Non-PLS	Mixed PLS & Non-PLS	All Clients
5. I always use financial products that parallel my spiritual beliefs even if they are more expensive or more sophisticated.	4.56	4.29	4.53	4.40
6. Most of the Islamic MFIs' schemes in Indonesia fulfil the Indonesia *shari'a* supervisory board's standards.	5.00	5.03	4.00	4.97
7. I believe the Indonesian *shari'a* supervisory board always monitors Islamic MFIs' products and services	5.22	4.98	3.40	4.99
8. Islamic MFIs always clearly describe their products and services to their clients.	5.41	5.35	4.80	5.34
9. If there is any dispute, I believe Islamic MFIs will make reasonable attempts that parallel Islamic values to resolve the problems.	5.45	5.38	4.86	5.38
10. I believe the aim of Islamic MFIs is not only profit oriented but also to help people and spread Islamic values.	5.58	5.64	4.93	5.58

Source: Author's calculations based on the survey questionnaire.

Table 5.10 shows the mean scores for clients' Islamic values. The clients were asked about 10 Islamic values that they believe and implement in their life and about their knowledge of Islamic MFIs. Questions one to three in the Islamic values section asked the clients whether their spiritual beliefs influence their life particularly their financial decisions. Questions four and five asked about the implementation of the clients' beliefs. Questions six and seven asked the clients' opinions on *shari'a* compliance and questions eight, nine, and ten asked about the clients' financing experiences.

Table 5.10 divided the clients into three groups: clients in a PLS scheme; clients in a non-PLS scheme; and clients in both a PLS and a non-PLS scheme and used a 7 point Likert scale (1= strongly disagree, 7 = strongly agree). Based on the mean score results, for questions one to three, the clients in the non-PLS scheme were superior to the other two groups (4.98, 4.82 and 4.84). The group mean was also above the average for all the clients. This means that the clients in a non-PLS scheme have good Islamic values and their beliefs play an important role in their financial decisions. For question four, the mean score of the clients in a non-PLS scheme surpassed the two other groups (4.67) and also exceeded the average of all clients (4.56). This means that these clients followed guidance from Islamic scholars more than the other two groups.

However, when the clients were asked about their consistency in using Islamic financial products, interestingly, the clients in a non-PLS scheme had the lowest mean among the three groups (4.29); their score was even lower than the mean for all clients (4.40).

Regarding *shari'a* compliance in Islamic MFIs' products, the average mean score for all the clients shows that most Islamic MFIs' schemes in Indonesia fulfil the *shari'a* supervisory board standards (4.97). The clients also believe that the *shari'a* supervisory board always monitors Islamic MFIs' products and services (4.99). The mean scores for the clients in a PLS scheme in questions eight and nine show that they are superior among the three groups (5.41) and (5.45). This means the clients in a PLS scheme received a better explanation from Islamic MFI officers with regard to their financing compared with the other two groups. Finally, for the last question, the clients in a non-PLS scheme exhibited the highest mean score (5.64) which indicates that they believe the aim of Islamic MFIs is not only for profit but also to help people (social) and spread Islamic values.

In summary, the mean scores in Table 5.10 for the clients in the PLS and non-PLS schemes are above 4.00 except the mean scores in questions one, six, and seven for the clients in both schemes (PLS and non-PLS) are 4.00 or less. This indicates that Islamic MFIs' clients in this study have good Islamic values in their daily life and their financial activities are influenced by their religious beliefs. Second, they practise their religious values in their financial activities and they believe Islamic MFIs give proper service to their clients.

Table 5.11 *Shari'a* compliance evaluation.

	Clients with PLS		**Clients with Non-PLS**		**Mixed PLS and Non-PLS**		**Clients**		**Statistical Test**
Financing scheme									
Murabahah	0	0.0%	143	88.2%	15	50.0%	157	51.6%	
Salam	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Ijarah Wa Iqtina'	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Qard	0	0.9%	19	11.8%	0	0.0%	20	6.6%	
Mudarabah	112	100.0%	0	0.0%	15	50.0%	127	41.8%	-
Musyarakah	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Muzara'ah	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Muzaqat	0	0.0%	0	0.0%	0	0.0%	0	0.0%	
Total	112	100.0%	162	100.0%	30	100.0%	304	100.0%	
Non-PLS murabahah (1)									
1 Strongly disagree	-	-	3	2.1%	0	0.0%	3	1.9%	
2 Disagree	-	-	2	1.4%	0	0.0%	2	1.3%	
3 Somewhat disagree	-	-	24	16.8%	4	26.7%	28	17.7%	$\chi^2 = 3.801$

Table 5.11 *Shari'a* compliance evaluation (cont.).

	Clients with PLS		Clients with Non-PLS		Mixed PLS and Non-PLS		Clients		Statistical Test
Financing scheme									
Non-PLS murabahah (1)									
4 Neutral	-	-	33	23.1%	5	33.3%	38	24.1%	
5 Somewhat agree	-	-	22	15.4%	3	20.0%	25	15.8%	$\chi^2 = 3.801$
6 Agree	-	-	29	20.3%	2	13.3%	31	19.6%	
7 Strongly agree	-	-	30	21.0%	1	6.7%	31	19.6%	
Total	-	-	143	100.0%	15	100.0%	158	100.0%	
Non-PLS murabahah (2)									
1 Strongly disagree	-	-	1	0.7%	0	0.0%	1	0.6%	
2 Disagree	-	-	1	0.7%	0	0.0%	1	0.6%	
3 Somewhat disagree	-	-	5	3.5%	0	0.0%	5	3.2%	
4 Neutral	-	-	7	4.9%	3	20.0%	10	6.3%	
5 Somewhat agree	-	-	35	24.5%	6	40.0%	41	25.9%	$\chi^2 = 9.260$
6 Agree	-	-	39	27.3%	1	6.7%	40	25.3%	
7 Strongly agree	-	-	55	38.5%	5	33.3%	60	38.0%	
Total	-	-	143	100.0%	15	100.0%	158	100.0%	
Non-PLS qard (1)									
1 Strongly disagree	-	-	0	0.0%	-	-	0	0.0%	
2 Disagree	-	-	0	0.0%	-	-	0	0.0%	
3 Somewhat disagree	-	-	1	5.6%	-	-	1	5.6%	
4 Neutral	-	-	0	0.0%	-	-	0	0.0%	
5 Somewhat agree	-	-	5	27.8%	-	-	5	27.8%	-
6 Agree	-	-	7	38.9%	-	-	7	38.9%	
7 Strongly agree	-	-	5	27.8%	-	-	5	27.8%	
Total	-	-	18	100.0%	-	-	18	100.0%	
Non-PLS qard (2)									
1 Strongly disagree	-	-	0	0.0%	-	-	0	0.0%	
2 Disagree	-	-	0	0.0%	-	-	0	0.0%	
3 Somewhat disagree	-	-	0	0.0%	-	-	0	0.0%	
4 Neutral	-	-	0	0.0%	-	-	0	0.0%	
5 Somewhat agree	-	-	4	22.2%	-	-	4	22.2%	-
6 Agree	-	-	7	38.9%	-	-	7	38.9%	
7 Strongly agree	-	-	7	38.9%	-	-	7	38.9%	
Total	-	-	18	100.0%	-	-	18	100.0%	
PLS mudarabah (1)									
1 Strongly disagree	5	4.8%	-	-	0	0.0%	5	4.4%	
2 Disagree	0	0.0%	-	-	0	0.0%	0	0.0%	
3 Somewhat disagree	11	10.6%	-	-	0	0.0%	11	9.8%	
4 Neutral	23	22.1%	-	-	1	12.5%	24	21.4%	$\chi^2 =$
5 Somewhat agree	13	12.5%	-	-	0	0.0%	13	11.6%	11.866
6 Agree	36	34.6%	-	-	3	37.5%	39	34.9%	
7 Strongly agree	16	15.4%	-	-	4	50.0%	20	17.9%	
Total	104	100.0%	-	-	8	100.0%	112	100.0%	

Table 5.11 *Shari'a* compliance evaluation (cont.).

	Clients with PLS		Clients with Non-PLS		Mixed PLS and Non-PLS		Clients		Statistical Test
Financing scheme									
PLS mudarabah (2)									
1 Strongly disagree	1	1.0%	-	-	0	0.0%	1	0.9%	
2 Disagree	1	1.0%	-	-	0	0.0%	1	0.9%	
3 Somewhat disagree	10	9.6%	-	-	0	0.0%	10	8.8%	
4 Neutral	15	14.4%	-	-	4	50.0%	19	16.7%	χ^2 =
5 Somewhat agree	22	21.2%	-	-	1	12.5%	25	21.9%	17.358
6 Agree	32	30.8%	-	-	0	0.0%	32	28.1%	
7 Strongly agree	23	22.1%	-	-	3	37.5%	26	22.8%	
Total	104	100.0%	-	-	8	100.0%	112	100.0%	

Source: Author's calculations based on the survey questionnaire.

With regard to financing schemes, Table 5.11 shows that of eight financing schemes listed on the questionnaire, only three were found in this study: *murabahah, qard,* and *mudarabah*. This implies that Islamic MFIs in Indonesia do not use all the financing schemes that are available in Islamic finance. This phenomenon is general in Indonesia since, according to Saparie (2017), around 60% Islamic banks' financing in Indonesia is dominated by the *murabahah* scheme and the rest is *mudarabah*. *Murabahah* (non-PLS) dominates (51.6%) followed by *mudarabah* (PLS) (41.8%) and *qard* (non-PLS) (6.6%). In terms of the evaluation of *shari'a* compliance in the three schemes in this study, the *murabahah* scheme shows that 24.1% of the clients answered neutrally for the first statement of *murabahah* (24.1%) ("Ownership of the goods or assets belongs to the Islamic MFI before the transaction"). The result implies that the clients in the *murabahah* scheme have no knowledge about the ownership of the goods before the transaction. Islamic MFI officers should explain clearly and follow the guidance of the *shari'a* standard that ownership of the goods or assets belongs to the Islamic MFI before the *murabahah* transaction. The results for this first statement are not statistically significant between the two groups.

Regarding the second statement of *shari'a* compliance in the *murabahah* scheme, over a third of clients (38%) agreed with the statement, which means that Islamic MFIs always disclose the cost of goods and their margin in the *murabahah* scheme before entering the sale and purchase agreement with their client. Therefore, based on clients' experiences, Islamic MFIs have followed the *shari'a* standard. There are also two statements about *shari'a* compliance for the *qard* scheme. The first investigated whether the Islamic MFIs charge any fee or take any benefit from their clients in *qard* financing. Over a third of the clients in *qard* financing exhibited a mean score of 6 (38.9%), which means that they agreed with this statement. The second statement regarding the *qard* scheme questioned the clients about whether Islamic MFIs consider rescheduling or writing off loans if the

borrower has difficulty with repayment. The results show that the clients that agreed and strongly agreed with this statement showed similar results (38.9%). In summary, clients in *qard* financing considered that this scheme parallels the *shari'a* standard.

The last scheme in this study is *mudarabah*. There are two statements for *shari'a* compliance evaluation in this scheme. The first statement investigated the clients in the *mudarabah* scheme on the contribution of capital. The *shari'a* standard states that Islamic MFIs must contribute 100.0% of the capital and the clients contribute their effort. Based on the result, 34.9% of clients agreed with the statement. The second statement asked what happens if losses are incurred in the project. Based on the *shari'a* standard, losses should be borne by the Islamic MFI so long as there is no negligence by the client. Based on clients' experiences, over a quarter (28.1%) agreed with this statement. In summary, evaluation of the *mudarabah* scheme indicates that the scheme parallels the *shari'a* standard.

In summary, from the three schemes identified in this study (*murabahah*, *qard*, and *mudarabah*), most clients concluded that the schemes parallel the *shari'a* standard, which means that there is no serious *shari'a* compliance issues with the products and services offered by Islamic MFIs in Indonesia.

Table 5.12 Mean score summary of *shari'a* compliance evaluation.

Shari'a compliance	Mean score
Debt-based financing (non-PLS)	
Murabahah (cost plus mark up)	
1. Ownership of the goods or assets belongs to the Islamic MFI before the transaction (before the goods are sold to the clients).	4.93
2. Islamic MFIs always disclose the cost of goods and their margin before proceeding to a sale and purchase agreement.	5.87
Debt-based financing (non-PLS)	
Qard (benevolent loan)	
1. Islamic MFIs do not ask for any benefit from the loan.	5.83
2. Islamic MFIs always consider rescheduling or writing off the loans if clients have difficulty in repaying the loan.	6.16
Equity financing (PLS)	
Mudarabah (profit-sharing)	
1. Islamic MFIs contribute 100.0% of the capital and clients contribute the effort.	5.02
2. Losses are borne by the Islamic MFI as long as there is no fraud or negligence by the client.	5.34

Source: Author's calculations based on the survey questionnaire.

Table 5.12 summarises the clients' opinions from their financing experience compared with the National *Shari'a* Board standards on a 7 point Likert scale (1= strongly disagree, 7 = strongly agree). The minimum score implies that financing from Islamic MFIs is not compatible with the standards of the Indonesia's *shari'a* board and the maximum score indicates that clients received financing that is compatible with the *shari'a* board of Indonesia standards. Table 5.12 shows the clients' average score for *shari'a* standards in a *murabahah* contract is 4.93 for the first statement and 5.87 for the second statement. The clients' average scores in a *qard* contract are 5.83 and 6.16, and the average score for clients with a *mudarabah* contract are 5.02 and 5.34 (see Table 5.12).

In summary, the clients' financing contracts are compatible with the standards of Indonesia's *shari'a* board. If we consider each scheme, the average mean scores are: *murabahah,* 5.40; *qard,* 5.99; and *mudarabah,* 5.18. The highest mean is in the *qard* scheme; this is not surprising because this scheme is a social scheme (benevolent loan); Islamic MFIs do not get any benefit from this loan. The source of funds for this scheme is from a social fund. Interestingly, in the *shari'a* compliance evaluation, the clients rated the *murabahah* scheme (non-PLS) higher (5.40) than the *mudarabah* scheme (PLS) (5.18). One reason is probably because non-PLS financing dominates Islamic MFIs' financing portfolio in Indonesia. Therefore, the focus of Islamic MFIs in Indonesia is on how to improve the *murabahah* scheme, including its *shari'a* compliance.

5.4 Measuring the impact of two financing mechanisms in Islamic MFIs

There are two financing forms in Islamic MFIs; profit and loss sharing (PLS) and non-PLS. This study includes clients in PLS and non-PLS schemes to identify the impact of each form on rural households' welfare. Using the double standard DID method (Section 5.3.1), this study estimates the impact of the two financing forms and suggests which form has the greater impact on rural household welfare. Section 5.3.2 summarizes the impact of the two financing forms and Section 5.3.3 evaluates the impact using the adjusted DID.

5.4.1 Impact estimation of two financing mechanisms in Islamic MFIs by the standard difference-in-difference approach

In the standard DID analysis, the treatment variable (M_{it}) is in a binary variable, indicating the rural household's membership as a client (PLS or non-PLS) and that it receives financing from Islamic MFI (1 = yes, 0 = otherwise). Because the estimated model is a logarithmic function, the dependent variable is a natural logarithm of the clients' welfare indicator (income and expenditure), then the coefficient (γ) of the treatment variable, when multiplied by 100.0, measures the approximate average percentage change in the indicator with respect to the treatment variable (Li et al., 2011b).

The results of the double standard DID show that rural household welfare measured by rural household annual income (RHAI) and rural household annual expenditure (RHAE) has significantly improved for Islamic MFIs' clients. There is improvement between 2012 and 2014 for both groups, clients in PLS and clients in non-PLS mechanisms (see column 3, Tables 5.13 and 5.14). The average RHAI for clients in the PLS increased 12.4% over two years; for clients in the non-PLS the increase was slightly less (12.1%). A positive significant improvement is also evident in RHAE for both types of client in the same period. To measure the true impact of financing by Islamic MFIs, the average outcome difference for non-clients between 2012 and 2014 (see column 6, Tables 5.13 and 5.14) is used to approximate the time trend suffered by clients in both PLS and non-PLS mechanisms.

After differencing the means of the double standard DID between the clients in PLS and clients in non-PLS, the average RHAI for the clients in the PLS increased significantly by 3.2% as a direct impact of financing by Islamic MFIs and this is significant at the 5% level (see column 7, Table 5.13). The average RHAI for clients in the non-PLS increased significantly by 2.9%, significant at the 5% level (see column 7, Table 5.14). However, the results also show that the average RHAE clients in the PLS decreased by 1.02% and the average RHAE for clients in the non-PLS decreased by 1.5%; both results are insignificant.

Table 5.13 Standard difference-in-difference estimates of Islamic MFIs' financing impact on clients in PLS financing.

Outcome Variables	Clients with PLS (n_3 = 112)			Non-Clients (n_2 = 140)			***DID impact estimator***
	Year 2012	Year 2014	*Difference* (D2)	Year 2012	Year 2014	*Difference* (D0)	
	$Yc1_{12}$	$Yc1_{14}$	D2 = $Yc1_{14}$ – $Yc1_{12}$	Ync_{12}	Ync_{14}	D0 = Ync_{14} – Ync_{12}	DID2 = D2 – D0
Log of annual income	7.4282 (0.00767)	7.5530 (0.02465)	0.12477*** (0.00767)	7.3434 (0.02878)	7.4355 (0.02765)	0.09206*** (0.01240)	0.03271** (0.01548)
Log of annual expenditure	7.1986 (0.02254)	7.3048 (0.02310)	0.10617*** (0.00821)	7.0904 (0.02641)	7.2069 (0.02382)	0.11646*** (0.01160)	-0.01028 (0.01491)

Note: Entries represent means of log household annual income and log household annual expenditure for the client with PLS and non-client groups;
Numbers in parentheses are standard errors;
, * represent the 5%, 1% significance levels for the *t*-test and means it is appropriate to use;
Source: Author's calculations based on the survey questionnaire.

Table 5.14 Standard difference-in-difference estimates of Islamic MFIs' financing impact on clients in non-PLS financing.

Outcome Variables	Clients with Non-PLS (n_4 = 162)			Non-Clients (n_2 = 140)			***DID impact estimator***
	Year 2012	Year 2014	*Difference* (D3)	Year 2012	Year 2014	*Difference* (D0)	
	$Yc2_{12}$	$Yc2_{14}$	D3 = $Yc2_{14}$ – $Yc2_{12}$	Ync_{12}	Ync_{14}	D0 = Ync_{14} – Ync_{12}	DID3 = D3 – D0
Log of annual income	7.4376 (0.02478)	7.5590 (0.02560)	0.12136*** (0.00641)	7.3434 (0.02878)	7.4355 (0.02765)	0.09206*** (0.01240)	0.02930** (0.01343)
Log of annual expenditure	7.2360 (0.02194)	7.3366 (0.02191)	0.100.05*** (0.00529)	7.0904 (0.02641)	7.2069 (0.02382)	0.11646*** (0.01160)	-0.01589 (0.01219)

Note: Entries represent means of log household annual income and log household annual expenditure for the client with non-PLS and non-client groups;
Numbers in parentheses are standard errors;
, * represent the 5%, 1% significance levels for the *t*-test and means it is appropriate to use;
Source: Author's calculations based on the survey questionnaire.

5.4.2 Impact evaluation of two financing mechanisms in Islamic MFIs

Based on the double standard DID estimation (see column 3, Table 5.15) the impact of financing by Islamic MFIs on all clients' annual income is positive and significant. The clients who had PLS financing mechanisms exhibited a greater impact on income than clients with non-PLS financing mechanisms. However, the impact of financing on clients' annual expenditure is negative but insignificant. These double standard DID estimations assume that only the treatment variables impact the rural households' outcomes (Y_{it}) between clients with PLS, clients with non-PLS, and non-clients.

Table 5.15 Impact estimates of Islamic MFIs' financing impact on rural household welfare between clients PLS and non-PLS.

Outcome Variables	***Clients***	***Difference***	***DID2 – DID3***
Log of annual Income	PLS (DID2)	0.0327104**	0.0034065
	Non-PLS (DID3)	0.0293039**	
Log of annual expenditure	PLS (DID2)	-0.0102839	0.0056138
	Non-PLS (DID3)	-0.0158977	

**represent 5% significance level and means it is appropriate to use;
Source: Author's calculations based on the survey questionnaire.

Considering the differences and imbalance in the household characteristics of the three groups and the possible association with Y_{it}, the double standard DID can lead to biased impact estimation. Therefore, it is important to estimate the DID equation with control variables.

5.4.3 Impact estimation of two financing mechanisms in Islamic MFIs by the adjusted difference-in-difference approach

To minimize biased impact estimation and enhance the standard DID results, this section evaluates the welfare impact using the adjusted DID method with fixed effect regression. Tables 5.16 and 5.17 present the adjusted DID results with the treatment variable (M_{it}) as a binary variable indicating clients in the PLS and non-PLS financing mechanism.

Table 5.16 shows the clients in the PLS, on average, increased their annual income by 8.1% compared with non-clients; this is positive and significant at the 5% level. However, the RHAE for clients in PLS decreased by 2.9% compared with non-clients, but the result is insignificant. Table 5.16 also shows the robust test of fixed effect estimation and the results for RHAI and RHAE are still the same, the only difference is in the standard errors.

Table 5.17 presents the adjusted DID for clients in a non-PLS. The results show that clients in the non-PLS increased their annual income by 6.8% compared with non-clients; this is significant at the 5% level. The RHAE for clients in the non-PLS decreased by 4.9% and is significant at the 10% level. However, when we test with the fixed effect robustness test the results remain the same for RHAI (the only difference is in the standard error) but for the RHAE the result become insignificant.

Overall, the explanatory power of the fixed effects model is adequate (see R^2, Tables 5.16 and 5.17). In both tables, the F-statistics are adequate and significant at the 1% level; this strongly rejects the null hypothesis of the fixed effects model in minimizing the selection bias in impact estimation.

Table 5.16 Fixed effect estimation of the impact of financing by Islamic MFIs on clients in PLS.

	Dependent Variable			
Variable	**RHAI**	**Robust RHAI**	**RHAE**	**Robust RHAE**
Intercept	16.9958***	16.9958***	16.43707***	16.43707***
	(0.0125028)	(0.0088319)	(0.0120401)	(0.0085051)
Year dummy $(d2_t)$	0.22100.036***	0.22100.036***	0.2591869***	0.2591869***
	(0.0246064)	(0.0273987)	(0.0236958)	(0.0247889)
Control Variables (X_{it})				
Major Loss dummy	-0.0631844	-0.0631844	0.0628319	0.0628319
(ML)	(0.0457544)	(0.0555449)	(0.0440612)	(0.0575353)
Treatment Variables (M_{it})				
Clients PLS	0.0815241**	0.0815241**	-0.0298505	-0.0298505
	(0.0358662)	(0.035100.02)	(0.0345389)	(0.0345354)
F Statistic	66.36***	112.04***	77.15***	91.70***
Household Fixed Effect	Jointly significant	Jointly significant	Jointly significant	Jointly significant
R-squared	0.4443	0.4443	0.4817	0.4817
Total Observation	504	504	504	504

*, **, *** represent the 10%, 5%, 1% significance levels for the *t*-test;
Source: Author's calculations based on the survey questionnaire.

Table 5.17 Fixed effect estimation of the impact of financing by Islamic MFIs on clients in non-PLS.

	Dependent Variable			
Variable	**RHAI**	**Robust RHAI**	**RHAE**	**Robust RHAE**
Intercept	17.02535***	17.02535***	16.50624***	16.50624***
	(0.0109277)	(0.0077206)	(0.0097873)	(0.0069149)
Year dummy $(d2_t)$	0.2129289***	0.2129289***	0.2542484***	0.2542484***
	(0.0233418)	(0.0275456)	(0.0209059)	(0.0248224)
Control Variables (X_{it})				
Major Loss dummy	-0.006661	-0.006661	0.0974019***	0.0974019*
(ML)	(0.038117)	(0.0442281)	(0.0341393)	(0.0424112)
Treatment Variables (M_{it})				
Clients non-PLS	0.0683734**	0.0683734**	-0.0497472*	-0.0497472
	(0.0314143)	(0.0340736)	(0.0281361)	(0.0311442)
F Statistic	87.55***	139.06***	110.76***	155.67***
Household Fixed Effect	Jointly significant	Jointly significant	Jointly significant	Jointly significant
R-squared	0.4676	0.4676	0.5264	0.5264
Total Observation	604	604	604	604

*, **, *** represent the 10%, 5%, 1% significance levels for the *t*-test;
Source: Author's calculations based on the survey questionnaire.

Based on the summary of adjusted DID estimates (columns 2 and 3 in Table 5.18), the impact of financing on RHAI is better for both groups of clients compared with the standard DID estimation. In addition, the clients in the PLS financing mechanism experienced greater increase in RHAI than clients in the non-PLS financing mechanism. However, the impact of financing on RHAE is negative for both client groups; for clients in the PLS it is insignificant but for clients in the non-PLS it is significant at the 10% level. The robustness test confirms that the PLS mechanism is better; the results for non-PLS remain the same except for the RHAE for non-PLS which becomes insignificant.

Table 5.18 Summary of adjusted difference-in-difference estimation of two financing mechanisms in Islamic MFIs.

Outcome variables	*Clients*	*Estimation*	*Robust*
RHAI	PLS	0.081** (0.035)	0.081** (0.035)
	Non-PLS	0.068** (0.031)	0.068** (0.034)
RHAE	PLS	-0.029 (0.034)	-0.029 (0.034)
	Non-PLS	-0.049* (0.028)	-0.049 (0.031)

Note: Numbers in parentheses are standard errors;
*and ** represent 10% and 5% significance levels and means it is appropriate to use;
Source: Author's calculations based on the survey questionnaire.

5.5 Determining factors that influence rural household to become client of Islamic MFI

Table 5.19 shows the estimated results of factors that influence rural households to become clients of Islamic MFIs. In general, the logistic model successfully predicted the possibility of rural households' access to Islamic MFI at 70.63% (see Appendix B). The likelihood ratio test, which is the Chi-square statistic, is 65.74, significant at the 1 percent level with 10 degrees of freedom, which means rejecting the null hypothesis and that the logistic model can be used to explain the probability of rural households accessing Islamic MFIs. Based on the results, four of the ten variables have a significant influence on rural households becoming Islamic MFI clients. These are: *Age*, *Age squared*, *Gender*, and *Income*. Most variables have signs as hypothesised (Table 5.19).

The positive and significant sign of *Age* indicates that rural households with higher ages have a higher probability of accessing finance from Islamic MFIs. The possible reason is that older rural households have more responsibility when they obtain financing from Islamic MFIs. Another reason is mature rural households usually have settled jobs compared with the youth. Conversely, the *Age Squared* is negative and significant which implies that rural households have certain or maximum ages to access Islamic MFIs. After the rural households have reached the maximum age set by Islamic MFIs, the

probability of accessing finance is low. The reason is that older clients have various risks such as retirement, getting diseases and being less productive.

Gender shows a positive and significant sign, which indicates that male rural household members have a higher probability of accessing finance from Islamic MFIs. The reason is because most household heads in Indonesia are men and most household decisions including financial ones are influenced by men. This is why men have a higher probability of obtaining finance from Islamic MFIs than women. The rural households' annual income exhibits a positive and significant sign which implies the higher income will lead to a higher probability of obtaining finance from Islamic MFIs. The possible reason is that rural households with high income have more capacity to repay the loans.

Table 5.19 Factors influencing rural household to become client of Islamic MFI (logistic regression).

Independent Variables	Estimated Coefficients	Standard Error	Wald Statistic	Average Marginal Effect
Age	2.060103***	0.4749611	4.34	0.3850034
Age Square	-0.2758062***	0.068518	-4.03	-0.0515442
Gender	0.9167494***	0.2304793	3.98	0.1713272
Household Size	0.083492	0.0887255	0.94	0.0156035
Education Level	0.1865408	0.2678583	0.70	0.0348618
Official Status	-0.2518213	0.3979556	-0.63	-0.0470618
Additional Income	0.0680126	0.2271891	0.30	0.0127106
Income	0.1708825*	0.0961412	1.78	0.0319355
Expenditure	0.1194949	0.0878702	1.36	0.0223319
Married	0.2706212	0.4381109	0.62	0.0505752
Constant	-5.057964***	0.9238645	-5.47	

McFadden R-squared	0.1213
Log likelihood	-238.06987
LR Statistics	65.74***
Degrees of Freedom	10
Total Observation	429

*, *** represent the 10%, and 1% significance levels and means it is appropriate to use;
Source: Author's calculations based on the survey questionnaire.

Table 5.19 shows the average marginal effect for each variable of the logit model. The marginal effect provides an interpretation of the influence of variables on rural households' access to Islamic MFIs (Phan, 2012). The marginal effect measures the change in probability of a certain choice made with respect to a unit change in an explanatory variable (Gao, 2011). For instance, the marginal effect of *Age* indicates that an increase in rural household age would increase by 38.5% the probability of a rural household becoming a client of an Islamic MFI. However, there is a certain maximum limit in age to becoming an Islamic MFI client, an additional increase in *Age squared* reduces the probability

of becoming a client by 5.1%. The probability of a rural household becoming an Islamic MFI client increases by 17.1% if the person is male. An increase in income of a rural household increases its probability by 3.1% of becoming an Islamic MFI client.

In conclusion, the empirical results from the logistic regression show that rural households' age, gender and income are three factors that influence a rural household to become an Islamic MFI client. This implies that Islamic MFIs consider age, gender and income of the rural household before disbursing finance.

5.6 Chapter summary

This chapter discussed and described the characteristics of respondents, which include clients and non-clients of Islamic MFI. In this study, clients were categorised into three types: clients who received PLS financing; clients who received non-PLS financing; and clients who received both financing (PLS and non-PLS). The chapter also provided the welfare impact estimation with a standard DID method between clients and non-clients of Islamic MFIs. Following the DID estimation, the chapter provided the results of fixed effect regression estimation and fixed effect robustness tests for clients of Islamic MFIs. The standard DID, fixed effect regression, and fixed effect robustness test estimations show that financing from Islamic MFIs have positive and significant impacts on rural households' incomes. This implies that rural households that received financing from Islamic MFIs will experience more increases in their incomes compared to non-clients.

The Islamic values and *shari'a* compliance evaluation were also discussed in this chapter, the results show that financing from Islamic MFIs in this study parallels the standards set by the National *Shari'ah* Board of Indonesia. The Islamic values' evaluation indicated that the financial activities of clients of Islamic MFIs in this study are influenced by their religious beliefs and they believe Islamic MFIs always give proper service to their clients according to Islamic values. The investigation of the two financing mechanisms in Islamic MFIs (PLS and non-PLS) show that PLS financing has more positive impacts on rural household incomes compared to non-PLS. Finally, *Age*, *Age Squared*, *Gender*, and *Income* are factors that influence rural households to become clients of Islamic MFI.

Chapter 6

Summary and Conclusions

This chapter summarises the study of Islamic MFIs in Indonesia. Section 6.1 presents a summary of the study including the research objectives, data and methodology. Section 6.2 discusses the major findings of the study. Section 6.3 presents the implications of the research findings. Section 6.4 discusses the research limitations and recommendations for future research are discussed in Section 6.5.

6.1 Summary

Islamic banking and finance in Indonesia have undergone significant growth over the past two decades. This development started in early 1990 with the establishment of Islamic MFIs in Indonesia and these have played an important role in the development of Islamic banking and finance in Indonesia by acting as pioneers of Islamic financial institutions in the country. The main aim of this study is to investigate the impact of Islamic MFIs' financing on rural households' welfare in Indonesia. There are four research objectives in this study: (i) to investigate the impact of Islamic MFIs' financing on rural households' welfare; (ii) to evaluate the Islamic values and *shari'a* compliance of MFIs; (iii) to investigate and evaluate the impact of two financing mechanisms (profit and loss sharing (PLS) and non-PLS) in Islamic MFIs; and to identify the factors that influence rural households to become Islamic MFIs' clients.

Chapter 1 defines the types of MFIs in the world. The chapter also provides an overview of Islamic MFIs especially their development in Indonesia. MFIs have the potential to provide financial access for poor people in rural areas and possess unique characteristics. The main feature of Islamic MFIs is that they are free from interest (*riba*) and all of products and services should parallel Islamic law (*shari'a*). A study of Islamic MFIs is important especially in a Muslim majority country like Indonesia. However, very few empirical studies focus on the impact of financing by Islamic MFIs, particularly in Indonesia.

Chapter 2 provides an overview of MFIs in Indonesia. An Islamic financial institution was first established in Indonesia in 1990. It started as an Islamic MFI (cooperative) in 1990, then became an Islamic rural bank in 1991 and an Islamic commercial bank in 1992. The first Islamic MFI in Indonesia was Ridho Gusti (a cooperative) that was established in 1990 in Bandung and most Islamic MFIs in Indonesia follow the cooperative structure in their business. Indonesia also has Bank Rakyat Indonesia (BRI), which currently has around 39,000 offices in Indonesia. BRI plays an important role in helping to provide financial access for rural households in Indonesia and is the most successful MFI

in Indonesia. It is a state-owned bank that focusses its business on micro lending. In 2014, BRI had over 50 million customers; around 31% of its lending was distributed to micro, small and medium enterprises (SMEs) via its micro-banking division. The micro-banking division alone covered around 7 million clients in 2014. The types of MFIs in Indonesia include formal, semi-formal and informal MFIs. Formal MFIs are supervised by Indonesian financial authorities (e.g., Indonesia Financial Service Authority (OJK)). Semi-formal MFIs include various types of cooperatives and so-called village banks (bank desa); not all of these institutions are supervised by the financial authorities. Informal MFIs in Indonesia consist of a wide variety of self-help groups (SHG), channelling groups and rotating savings and credit associations (ROSCAs), in Indonesia called "arisan".

Chapter 3 reviews the literature on Islamic MFIs' impact on rural households' welfare; *shari'a* compliance and Islamic values; the evaluation of two financing mechanisms in Islamic MFIs and factors that influence rural households to become clients of Islamic MFIs. The review of Islamic MFI literature suggests that these institutions can play an important role to help poor Muslims access financial products and services. This is because the products and services from Islamic MFIs parallel Muslim beliefs. Moreover, Islamic MFIs located in rural areas have advantages in reaching rural households and providing *shari'a* financial products to them. The literature review shows that there is still a lack of a robust estimation technique on impact measurement of Islamic MFIs. The difference-in-difference (DID) method is a popular panel data technique to measure the impact of treatments in the absence of experimental data. The combination of the DID technique with the fixed effects method helps improve the estimation results of impact evaluation in Islamic MFIs' financing. The Islamic MFIs are also required to follow *shari'a* standards which are set by Islamic scholars to ensure that their products and services parallel Islamic law. The *shari'a* compliance of products and services in Islamic MFIs is important because Muslims are prohibited from using financial products that do not conform to Islamic law. The review showed that *sharia* compliance issues possibly occur with Islamic financial products. Therefore, Islamic MFIs have a *shari'a* supervisory board to regularly monitor products and services.

The literature review on two financing mechanisms in Islamic MFIs suggests that PLS is the ideal financing mechanism for Islamic financial institutions including Islamic MFIs; PLS financing makes Islamic MFIs different from conventional MFIs because PLS promotes sharing profits and losses between the institutions and their clients. However, financing today is still dominated by non-PLS financing mechanisms; for instance, according to Abdul-Rahman et al. (2014) PLS financing in the Malaysian Islamic bank comprises less than 3%; the majority is based on mark-up pricing and leasing which are included in the non-PLS financing mechanism. To date no empirical study has evaluated the two financing mechanisms and identified which mechanism has the better impact on clients. Most of the literature on impact evaluation did not separate the two financing mechanisms,

therefore it is difficult to identify which finance mode produces the greater impact for the clients. Finally, the chapter reviews the literature on the factors that determine if rural households become clients of Islamic MFIs. The review covers both theoretical and empirical models that focus on factors that influence rural households to become clients of Islamic MFIs.

Chapter 4 discusses the research data collection and methodology. The conceptual and empirical framework for each objective is discussed in the chapter. The methods investigating the impact of microfinance on rural households' welfare mostly used changes in income and expenditure. The review of *shari'a* compliance evaluation suggests that local *shari'a* standards is one mechanism used to identify whether there are violations of *shari'a* compliance. Previous studies evaluating the two financing mechanisms (PLS and non-PLS) in Islamic MFIs did not empirically evaluate the impact of the Islamic MFIs on the two financing mechanisms. Finally, a method to investigate the determining factors that influence rural households to become clients and receive finance from Islamic MFIs were also discussed in the chapter.

Chapter 5 discusses the research results. The data description gives an overview of the data obtained to answer the four research objectives of the study. The findings of the study, the impact evaluation, *shari'a* compliance evaluation, the two financing mechanisms' evaluation and factors that determine how rural households become clients are described. The DID estimation technique and fixed effect regressions in this study show that financing by Islamic MFIs has a positive impact on rural households' welfare in terms of increased in income. The evaluation of the two Islamic MFI financing mechanisms (PLS and non-PLS) shows that PLS financing has a greater welfare impact than non-PLS. The assessment of *shari'a* compliance on Islamic financing contracts shows that most schemes parallel Indonesia's *shari'a* board standards, which implies that Islamic MFIs follow the guidance and standards from Indonesia's *shari'a* board.

6.2 Major findings

This study focuses on financing provided by Islamic MFIs in Indonesia. Primary and secondary data were used in this study. The primary data were collected using a structured questionnaire. Using convenience sampling, 429 usable surveys were returned from three areas of four Islamic MFIs in East Java Province. The sample was then divided into clients and non-clients and clients were further divided into clients with PLS and clients with non-PLS financing mechanisms. The survey questionnaire was personally administered to rural households from November 2014 to February 2015. Secondary data were obtained from four Islamic MFIs to support the primary data. The evaluation of the two financing mechanisms and the impact measurement of financing by Islamic MFIs was based on a two-year rural households' panel dataset. This study used cross-sectional data

to analyse s*hari'a* compliance, Islamic values and the factors that determine how rural households become Islamic MFIs' clients.

This study used the double difference-in-difference (DID) approach to evaluate the impact of the two financing mechanisms (i.e., clients with PLS and clients with non-PLS) in Islamic MFIs. First, based on the DID method, this study identified which financing mechanism exhibits a more positive impact on rural household welfare. Next, a fixed effect regression and a fixed effect robustness test were used to minimize bias. *Shari'a* compliance and Islamic values' evaluation were examined using mean scores through Likert-scale questions in the questionnaire. The examination was based on clients' financing experiences; *shari'a* compliance is based on Indonesia's *shari'a* board standards. Finally, factors that determine how rural households become Islamic MFIs' clients were analysed using logistic regression.

The financing impact evaluation results are summarised in Table 6.1. The *shari'a* compliance results and Islamic values' evaluation are summarised in Table 6.2 and the logistic regression results for the determining factors in Table 6.3. For research objective one, the impact results show that financing by Islamic MFIs has a positive, significant impact on rural households' welfare in terms of annual income (RHAI) (see Table 6.1). Financing from Islamic MFIs increased RHAI by 2.8% (significant at the 1% level) in the standard DID analysis (see Table 5.7). The fixed effect regression (see Table 6.1) further confirms that financing by Islamic MFIs has a positive and significant impact on RHAI and helped increase RHAI by 6.8% (see Table 5.8).

However, the impact on RHAE is negative and significant in the adjusted DID estimate (see Table 6.1), which implies that financing by Islamic MFIs decreases RHAE by 3.9% (significant at the 10% level) (see Table 5.8). The robustness test on the adjusted DID estimate shows that financing by Islamic MFIs has a positive impact on RHAI (see Table 6.1) and increases RHAI by 6.8%; this result is significant at the 5% level (see Table 5.9). The control variable, major loss (ML), is positive and significant on RHAE (at the 10% level) and implies ML experienced by rural households will affect their expenditures (increase their expenditure by 5.2%) (see Table 5.9).

Table 6.1 Islamic MFIs clients' welfare estimates compared with non-clients.

Dependent variables	Clients		
	All	PLS	Non-PLS
Standard DID Analysis			
Income	(+)	(+)	(+)
Expenditure	(0)	(0)	(0)
Adjusted DID Analysis			
Income	(+)	(+)	(+)
Expenditure	(-)	(0)	(-)
Adjusted DID Analysis (Robust)			
Income	(+)	(+)	(+)
Expenditure	(0)	(0)	(0)

To answer research objective three, evaluation by standard DID analysis of the two Islamic MFIs financing mechanisms shows that clients with PLS financing can increase their income more than clients with non-PLS financing. Clients with PLS financing can increase their income by 3.2% but only 2.9% for clients with non-PLS financing; both results are significant at the 1% level (see Table 5.16). The adjusted DID estimates consistently support the standard DID analysis, whereas PLS financing increases RHAI by 8.1% and non-PLS financing increases RHAI by 6.8%; both are significant at the 5% level (see Table 5.19).

However, the impact on RHAE is negative and significant at the 10% level for non-PLS financing in the adjusted DID estimate (see Table 6.1), which implies that financing by Islamic MFIs decreases the RHAE of clients with non-PLS financing by 4.9% (see Table 5.19). The robustness test in fixed effect estimation shows consistent results for RHAI; PLS financing exhibited greater impact on RHAI than non-PLS financing (see Table 5.21). Clients with PLS financing show RHAI increased by 8.1% but for clients with non-PLS financing RHAI increased only 6.8%; both are significant at the 5% level (see Table 5.21). The control variable, major loss (ML), has a positive, significant effect on RHAE for non-PLS clients. This implies that rural households that experienced ML increased their expenditure by 9.7% (significant at the 10% level) (see Tables 5.18 and 5.20).

To answer research objective two, summaries of the s*hari'a* compliance evaluation show that financing received by rural households paralleled the standards of Indonesia's *shari'a* board (see Table 6.2). Using a 7-point Likert scale with a minimum score implies that financing by Islamic MFIs is not compatible with the *shari'a* board's standards, the maximum score indicates otherwise. Three schemes were observed in this study: *mudarabah*, *murabahah*, and *qard.* Each scheme was evaluated by two criteria that are required by Indonesia's *shari'a* board standards; most schemes received by rural households are compatible with the standards (see Table 5.13). The average mean score for the *mudarabah* scheme is 5.18, *murabahah* is 5.40 and *qard* is 5.99 (see Table 6.2). The

results show that non-PLS financing exhibited a higher score than PLS financing in *shari'a* compliance evaluation.

Table 6.2 Clients' *shari'a* compliance and Islamic values evaluation.

Schemes/Mechanism	Average Mean Score
Shari'a Compliance Evaluation	
PLS	
Mudarabah (profit-sharing)	5.18
Non-PLS	
Murabahah (cost plus mark-up)	5.40
Qard (benevolent loan)	5.99
Islamic Values Evaluation	
PLS	4.94
Non-PLS	4.99
Mixed PLS & Non-PLS	4.34
All clients	4.94

To answer research objective two, the Islamic values evaluation is summarised in Table 6.2. The evaluation is based on 10 values and evaluated only for Islamic MFI clients. The Islamic values evaluated in this study are highly correlated with the clients' financial decisions, financing experience and their knowledge of Islamic MFIs. We used a 7-point Likert scale for each statement of Islamic values. The maximum score implies that Islamic MFIs' clients exhibit good Islamic values and a minimum score indicates otherwise. The average score for clients with PLS financing is 4.94, clients with non-PLS financing 4.99, clients with mixed financing is 4.34 and for all clients 4.94 (see Table 6.2). Overall, the average mean scores imply that most clients refer to the Islamic values before they make their financial decisions; Islamic values influence their daily life, clients have ample knowledge of Islamic MFIs and, finally, the results also indicate that Islamic MFIs give clear information about their products and services to the clients.

Addressing the final research objective (four) regarding the factors that determine rural households becoming clients and receiving financing from Islamic MFIs, the results show that four of the 10 factors investigated in this study are significant. The factors are *Age*, *Age squared*, *Gender*, and *Income*. *Age* has a positive, significant impact (at the 1% level) on influencing rural households to become clients and receive finance from Islamic MFIs. The results indicate that an increase in age parallels an increase in respondents' likelihood to become Islamic MFIs' clients (see Table 5.22 and 6.3). The second factor, *Age squared* has a negative and significant impact (at the 1% level) on rural households. This implies that Islamic MFIs have a maximum age limit in giving finance to rural households in Indonesia (see Tables 5.22 and 6.3). Gender also influences rural households to become clients and receive finance from Islamic MFIs. The result shows males have a greater likelihood to become an Islamic MFI client than females (see Tables 5.22 and 6.3).

Finally, *Income* has positive, significant impact (at the 10% level) in influencing rural households to become Islamic MFI clients. The result indicates that rural households with a greater income have a greater likelihood of becoming clients and receiving finance from Islamic MFIs (see Tables 5.22 and 6.3).

Table 6.3 Determining factors affecting rural household to become client of Islamic MFI.

Factor	All Respondents
Age	(+)
Age square	(-)
Gender (male)	(+)
Household size	(0)
Education level	(0)
Official status	(0)
Additional income	(0)
Income	(+)
Expenditure	(0)
Marital status (married)	(0)

6.3 Implication of the research findings

The findings of this study have several implications for academics, rural households, the Islamic MFI Industry association, and policy makers in Indonesia.

6.3.1 Academic implications

The study findings contribute to academia by filling the gap in the literature on the evaluation of the two Islamic MFIs financing mechanisms (PLS and non-PLS). To date, no empirical study has evaluated these financing mechanisms. The results show that PLS financing has more impact on rural households than non-PLS financing. Previous studies such as Dusuki and Abdullah (2006), Asutay (2007), Azmat et al. (2015), Chong and Liu (2009), and Ibrahim and Mirakhor (2014) argued that PLS financing is the ideal financing mechanism in Islamic finance, and that this mechanism makes Islamic finance different from conventional finance.. The use of DID, adjusted DID and the robustness test in the impact evaluation is also a major contribution to the Islamic finance literature.

In addition, the results show that no issues of *shari'a* compliance exist. This implies that financing by Islamic MFIs is already compatible with Indonesia's *shari'a* board standards. The Islamic values' evaluation results reveal that Islamic MFIs' clients have a good knowledge of Islamic MFIs and the Islamic values embedded in their daily life. This study also identified *Age*, *Age squared*, *Gender* and *Income as* factors that influence rural households to become Islamic MFIs' clients.

6.3.2 Rural household implications

The findings also have some implications for rural households. This study found that Islamic MFIs helped to increase RHAI by 6.8%. Clients with PLS financing scheme can increase their income by 8.1% during the financing period. Based on these results, rural households may consider Islamic MFIs as important institutions to help increase family welfare. In addition, the results show that financing by Islamic MFIs parallels the *shari'a* standards based on the National *Shari'a* Board of Indonesia. This implies the products and services from Islamic MFIs are already parallel with the Muslim households' beliefs. Therefore, if Muslim rural households seek *shari'a* compliance financing, they may seek Islamic MFIs as their finance source. Factors that determine how rural households become clients of Islamic MFIs are a source of information for rural households before applying for finance with Islamic MFIs.

6.3.3 Islamic MFI industry implications

The Islamic MFI industry may benefit from this study's findings. First, the results reveal that clients' perceptions of Islamic MFIs are good. Based on the Islamic values' evaluation, clients agreed that most Islamic MFIs in Indonesia fulfil the requirements of Indonesia's *shari'a* board. Moreover, based on the clients' experience, Islamic MFIs in Indonesia clearly describe their products and services and, the orientation of Islamic MFIs is not only for profit but also for social purposes. In addition, the Islamic MFI industry may discover rural households' lack of awareness of Islamic MFIs based on this study. The results show that about 22.9% of non-clients are not aware that Islamic MFIs exist in their area and around 27% of them answered that a lack of marketing and promotion is a major reason (see Table 5.3).

6.3.4 Association implications

The associations such as the Centre for Micro Enterprise Incubation or Pusat Inkubasi Bisnis dan Usaha Kecil (PINBUK), BMT Centre, Dompet Dhuafa, and Induk Koperasi Syariah BMT (Inkopsyah BMT) that are concerned with the development of Islamic MFIs in Indonesia may use the study's findings for their reference. The research results, i.e., impact evaluation, *shari'a* compliance and Islamic values assessment, and identifying the determining factors that influence rural households to receive finance may motivate the associations to continue to develop Islamic MFIs in Indonesia.

6.3.5 Implications for policy makers

The findings show a positive and significant impact of financing by Islamic MFIs on rural households' welfare (income). PLS financing can help improve RHAI by 8.1% within two years. The results also reveal that Islamic MFIs' financing is already compatible with Indonesia's *shari'a* board standards. Factors that determine how rural households become clients and receive finance from Islamic MFIs

were also identified in this study. According to Karim et al. (2008) the development of Islamic MFIs is influenced by government regulation. In Indonesia, Islamic MFIs suffer from prudential regulations, monitoring and supervision by the relevant financial authority (Seibel & Dwi Agung, 2006). Therefore, the Indonesian government needs to strengthen the regulations especially to support the development of Islamic MFIs. In addition, the government should improve the monitoring and supervisory systems in Indonesia, especially setting up a reliable database of Islamic MFIs in Indonesia. This research, hopefully, may enlighten policy makers in Indonesia about the potential of Islamic MFIs as one solution in poverty alleviation.

6.4 Research limitations

There are several limitations in this study especially associated with the sample selection, data collection and assessment approach. The limitations are:

- This research covers only clients from four Islamic MFIs in East Java, Indonesia. In addition, the study area was restricted to three regencies in East Java. Therefore, the findings may not be representative of Indonesia. With regard to financing schemes, only three schemes were discovered in this research: *mudarabah* (PLS); *murabahah* (non-PLS); and *qard* (non-PLS). Hence, the results may not represent the characteristics of all schemes from Islamic MFIs.
- This study captured only current data and information on Islamic MFIs' clients and non-clients. No data are available on non-clients who might have borrowed and dropped out during this study (survey). In addition, there are no previous data of Islamic MFIs' clients who might borrow from conventional financial institutions.
- This study used rural household outcomes (such as income and expenditure) to investigate the impact of financing by Islamic MFIs. Since there is no reliable and proper database of Islamic MFIs and their clients in Indonesia, the data in this study rely heavily on primary data collected through a survey questionnaire; if rural households did not provide accurate data, this would impact on the reliability of the estimates.
- There is only one control variable (major loss) used in the adjusted DID estimation and robustness test in this study because of the unavailability of a data panel for other control variables. However, the control variable in this study significantly affected rural households' expenditure. Other control variables such as household size and income earner may be considered for inclusion in future study, because the variables might have influence on rural household income and expenditure.
- The *shari'a* compliance evaluation in this research compares only the perceptions and experience of clients and Indonesia's *shari'a* board standards. This research does not use any other standard

such as standards set by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI).

6.5 Recommendations for future research

Future research should expand the scope of this study to include more areas/provinces in Indonesia. Further the household sample size should be expanded in order to better represent the population. Future research should also consider different techniques to obtain the study sample. A probability sampling technique is recommended in order to generalise the findings. At the moment, there is no reliable database of Islamic MFIs or Islamic MFIs' clients in Indonesia.

To provide a comprehensive study of the impact evaluation of the two financing mechanisms, more Islamic finance schemes such as *musyarakah* or *ijarah* should be included in future research. Future research should also enlarge the sample for each Islamic finance scheme to get better estimates of their impact. Future research should also consider other impacts of Islamic MFIs such as on business knowledge, skill and religious activities.

With regard to Islamic values evaluation, future research can include panel data for before and after financing to identify any change of clients' religious activities. These data can enrich the study about Islamic values evaluation and the research can estimate the impact of financing from Islamic MFIs on changes in clients' Islamic values. Future research can also measure the impact of the two Islamic MFIs' financing mechanisms on the clients' Islamic values and identify which financing mechanism has the greater impact on clients' Islamic values.

Regarding the factors that determine rural households becoming clients of Islamic MFIs, future research should include variables not discussed in this study (e.g., ethnographies and demographics) in order to expand other possible factors that may influence the accessibility of Islamic MFI financing. Future research can also survey the Islamic MFIs' perspective in order to get a comprehensive study rather than from only the clients' perspective.

Appendix A

Description of Variables Used in Welfare Impact Estimation

A.1 Description of variables used for general clients

Variables	Type of variable	Description of variables
RHAI	Continuous	Log of rural household annual income
RHAE	Continuous	Log of rural household annual expenditure
ML	Dummy	Major loss indicator equal to “1” if yes and “0” otherwise
Year	Dummy	Year indicator equal to “1” for 2014 and “0” otherwise
Clients of Islamic MFI	Dummy	Clients of Islamic MFI equal to “1” if yes and “0’ otherwise

A.2 Description of variables used for clients with PLS financing

Variables	Type of variable	Description of variables
RHAI	Continuous	Log of rural household annual income
RHAE	Continuous	Log of rural household annual expenditure
ML	Dummy	Major loss indicator equal to “1” if yes and “0” otherwise
Year	Dummy	Year indicator equal to “1” for 2014 and “0” otherwise
Clients with PLS financing	Dummy	Clients with PLS financing equal to “1” if yes and “0’ otherwise

A.3 Description of variables used for clients with non-PLS financing

Variables	Type of variable	Description of variables
RHAI	Continuous	Log of rural household annual income
RHAE	Continuous	Log of rural household annual expenditure
ML	Dummy	Major loss indicator equal to “1” if yes and “0” otherwise
Year	Dummy	Year indicator equal to “1” for 2014 and “0” otherwise
Clients with non-PLS financing	Dummy	Clients with non-PLS financing equal to “1” if yes and “0’ otherwise

Appendix B

Actual and Predicted Outcomes of Logit

	Actual Respondents		
	Client	Non-Client	Total
Number of correct predictions	259	96	355
% of correct predictions	89.62	31.43	82.7
Number of incorrect predictions	30	44	74
% of incorrect predictions	72.96	59.46	17.24
Predicted probability	70.63		

Note: Numbers obtained from logit model.

Appendix C

Pairwise Correlation of the Independent Variables for Logit

	Age	Age Square	Gender	Household Size	Education Level	Official Status	Additional Income	Income	Expenditure	Married
Age	1									
Age Square	0.9771*	1								
Gender	0.1581*	0.1719*	1							
Household Size	-0.0119	-0.0428	0.0519	1						
Education Level	-0.1048*	-0.1009*	-0.0459	-0.0749	1					
Official Status	0.1440*	0.1369*	-0.0531	-0.0891	0.1605*	1				
Additional Income	0.0782	0.0615	-0.0269	0.0340	0.1031*	0.0532	1			
Income	0.0045	-0.0167	0.0473	-0.0363	0.1374*	0.1551*	0.0301	1		
Expenditure	0.1129	0.0851	0.0419	-0.0094	0.1358*	0.2082*	0.0586	0.6774*	1	
Married	0.1523*	0.0818	0.0196	0.0850*	0.0002	0.0580	0.1116	0.0653	0.1205*	1

*Note: *indicates significance level at least 5%.*

Appendix D

Survey Questionnaire

Lincoln University
Te Whare Wānaka o Aoraki
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Dear Sir/Madam,

If you are aged 18 years or above and head of a household, you are invited to participate in a survey that constitutes part of my PhD thesis at Lincoln University, New Zealand. This study investigates the financing of Islamic MFIs to the rural households in Indonesia. This study also examines the *shari'a* compliance in Islamic MFIs products and services and current government support programmes to Islamic MFIs' clients. This survey is completely voluntary in nature and you are free not to participate. However, if you complete the questionnaire and return it to me, it will be understood that you are 18 years of age or older, head of a household and have consented to participate in this survey and consent to publication of the results of this research with the understanding that anonymity will be preserved.

Your participation is of great assistance to this research. This survey will take a maximum of 45 minutes to complete. I would be grateful if you would complete the questionnaire and return it to me once you have finished. Your contact details were obtained from the Islamic MFI. As the questionnaire is anonymous, no questions are asked that would identify you as an individual. All responses will be aggregated for analysis and no personal details will be reported in the thesis, any resulting future academic publications or to any third parties. The identity of any participant will not be made known to any person other than the researcher, his or her supervisors and the Human Ethics Committee of Lincoln University, without the participant's consent.

If you have any question about this survey, feel free to contact me on +62354 686191 or by email at BayuArie.Fianto@lincolnuni.ac.nz. You may also contact my supervisors Prof Christopher Gan, Dr Baiding Hu and Dr Jamal Roudaki. Prof Christopher Gan can be contacted at +64 3 4230227 or Christopher.Gan@lincoln.ac.nz; Dr Baiding Hu can be contacted at +64 3 4230231 or Baiding.Hu@lincoln.ac.nz and Dr Jamal Roudaki can be contacted at +64 3 4230234 or Jamal.Roudaki@lincoln.ac.nz.

Thank you for your kind co-operation and assistance.
Yours sincerely,

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PhD Candidate, Faculty of Agribusiness and Commerce

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Islamic Microfinance Institutions Financing' Survey

Instructions: For each question with brackets provided, please tick your answer(s); otherwise, please follow the instructions given to answer the questions. Your participation is voluntary and your answers will be kept confidential.

Section 1. Accessibility and Impact of Islamic Microfinance Institutions (MFIs)

1. Did you need to borrow money at any time in the last 2 years?
   a. YES [ ] b. NO [ ]
   (If YES, please go to Q2; if NO, please skip to Q5)

2. Were you able to get the financing?
   a. YES [ ] b. NO [ ]
   *(If YES, go to Q3; if NO, please go to Q6 and then proceed to **section 2**)*

3. What was your main source of financing?
   a. Formal financial institution [ ]
   b. Informal financial institution [ ]
   c. Both sources [ ]

4. Which source(s) of financing did you obtain?
   (You can tick more than one)

1. Formal sources		**2. Informal sources**	
a. Commercial bank s(e.g., Bank Mandiri)	[ ]	a. Private money lender (e.g., usurers)	[ ]
b. Islamic commercial bank (e.g., Bank Syariah Mandiri)	[ ]	b. Trade financing, wholesaler or retailer	[ ]
c. Islamic business unit (e.g., BPD Jawa Timur)	[ ]	c. Input supplier/dealer	[ ]
d. Islamic rural bank (e.g., BPRS Bhakti Makmur Indah)	[ ]	d. Friends/Relatives	[ ]
d. Pawnshop (e.g., PT. Pegadaian)	[ ]	e. Rural aid society	[ ]
e. Islamic pawnshop (e.g., PT. Pegadaian syariah)		f. Others (specify)_____	[ ]
f. Others (specify)_____			

5. If No, why didn't you borrow?
   (You can tick more than one)
   a. Had enough savings/earnings from other sources [ ]
   b. Received financial assistance from the government [ ]
   c. Do not qualify for financing [ ]
   d. Did not like to incur debt [ ]
   e. Interest rates were not affordable [ ]
   f. Too many required documents to submit [ ]
   g. Uncertainty in repaying the financing [ ]
   h. Other(s), please specify _____

6. Do you know about Islamic MFIs in your township?
   a. YES [ ] b. NO [ ]
   (*If NO, please go to Q8)*

7. If YES, which type(s) of Islamic MFI(s) is available in your township?
   (You can tick more than one)
   a. Islamic financial services cooperatives (KJKS) [ ]
   b. Islamic financial services unit (UJKS) [ ]
   c. *Baitul Maal Wa Tamwil* (BMT) [ ]
   d. Other(s), please specify _____

8. What were the reasons you do not know about Islamic MFIs in your township?
   (You can tick more than one)
   a. Islamic MFIs in my township do not promote themselves. [ ]
   b. I thought all financial institutions are the same including Islamic MFIs [ ]
   c. I do not know if any Islamic MFIs exist in my township. [ ]
   d. It is not really important for me [ ]
   e. Other reason(s), please specify _____

Section 2. Clients of Islamic MFIs

1. Did you borrow from any Islamic MFI over the last 2 years?
   a. YES [ ] b. NO [ ]
   *(If NO, please proceed to **section 3**)*

2. Based on your largest financing amount, which Islamic MFI did you borrow from over the last 2 years?
   a. Islamic financial services cooperatives (KJKS) [ ]
   b. Islamic financial services unit (UJKS) [ ]
   c. *Baitul Maal Wa Tamwil* (BMT) [ ]
   d. Other(s), please specify _____

3. How many times did you borrow from Islamic MFIs in the last 2 years?
   a. Once [ ]
   b. Twice [ ]
   c. Three times [ ]
   d. More than three times [ ]

4. What was the total amount of financing you applied from Islamic MFIs?
   a. Less than Rp. 1,000,000 [ ]
   b. Between Rp. 1,000,001 and Rp. 3,000,000 [ ]
   c. Between Rp. 3,000,001 and Rp. 5,000,000 [ ]
   d. Between Rp. 5,000,001 and Rp. 7,000,000 [ ]
   e. Between Rp. 7,000,001 and Rp. 15,000,000 [ ]
   f. More than Rp. 15,000,000 [ ]

5. What was the total amount of financing approved by the Islamic MFI in your application?
   a. Less than Rp. 1,000,000 [ ]
   b. Between Rp. 1,000,001 and Rp. 3,000,000 [ ]
   c. Between Rp. 3,000,001 and Rp. 5,000,000 [ ]
   d. Between Rp. 5,000,001 and Rp. 7,000,000 [ ]
   e. Between Rp. 7,000,001 and Rp. 15,000,000 [ ]
   f. More than Rp. 15,000,000 [ ]

6. Was the amount of financing approved adequate?
   a. YES [ ] b. NO [ ]

7. If inadequate, did you borrow from other financial institution(s)?
   a. YES [ ] b. NO [ ]

8. If YES, where did you obtain your additional financing? (You can tick more than one source)

1. Formal sources		**2. Informal sources**	
a. Commercial banks (e.g., Bank Mandiri)	[ ]	a. Private money lender (e.g., usurers)	[ ]
b. Islamic commercial bank (e.g., Bank Syariah Mandiri)	[ ]	b. Trade, wholesaler or retailer	[ ]
c. Islamic business unit (e.g., BPD Jawa Timur)	[ ]	c. Input supplier/dealer	[ ]
d. Islamic rural bank (e.g., BPRS Bhakti Makmur Indah)	[ ]	d. Friends/Relatives	[ ]
d. Pawnshop (e.g., PT. Pegadaian)	[ ]	e. Rural aid society	[ ]
e. Islamic pawnshop (e.g., PT. Pegadaian syariah)		f. Others (specify)_____	[ ]
f. Others (specify)_____			

9. What was the purpose of your borrowing? (You can tick more than one reason)

<u>Agricultural activities</u>

   a. Farm cropping [ ]
   b. Livestock raising [ ]
   c. Produce processing [ ]
   d. Purchase of farming machinery [ ]
   e. Other(s), please specify _____

<u>Non-agricultural activities</u>

   a. To start a self-run enterprise [ ]
   b. To finance an existing enterprise [ ]
   c. To finance a small-scale project [ ]
   d. Basic household needs [ ]
   e. To pay for children's education [ ]
   f. Emergency (e.g., hospitalisation) [ ]
   g. Housing (e.g., repair, construction) [ ]
   h. Paying off other debts [ ]
   i. Other(s), please specify_____

10. What was the duration of your financing?
   a. 3 to 6 months [ ]
   b. 7 to 12 months [ ]
   c. 1 to 2 years [ ]
   d. 2 to 3 years [ ]
   e. More than 3 years [ ]

11. What was the mode of your financing payment?
   a. Weekly [ ]
   b. Monthly [ ]
   c. Semi-annually [ ]

d. Annually [ ]
e. Other(s), please specify _____

12. Did your borrowing require collateral?
a. YES [ ] b. NO [ ]

13. If YES, what kind of collateral was required? (You can tick more than one)
a. Mortgage property [ ]
b. Chattels mortgage (i.e., vehicles, farm equipment) [ ]
c. Promissory note [ ]
d. Co-signer/co-guarantor [ ]
e. Deposits [ ]
f. Other(s), please specify _____

14. What is the status of your most recent financing?
a. Fully paid [ ]
b. Current [ ]
c. Past due [ ]
d. Restructured [ ]

15. How long did the Islamic MFI take to process your financing application?
a. Less than a week [ ]
b. 1 week [ ]
c. 2 weeks [ ]
d. 3 weeks [ ]
e. 1 month [ ]
f. More than a month [ ]

16. Did any village committee member refer you to an Islamic MFI?
a. YES [ ] b. NO [ ]

17. If YES, which types (s) of Islamic MFI did they recommend to you?
(You can tick more than one)
a. Islamic financial services cooperatives (KJKS) [ ]
b. Islamic financial services unit (UJKS) [ ]
c. *Baitul Maal Wa Tamwil* [ ]
d. Other(s), please specify _____

18. How long have you been a client of an Islamic MFI?
a. Less than 1 year [ ]
b. 1 to 2 years [ ]
c. 2 to 3 years [ ]
d. 3 to 4 years [ ]
e. More than 5 years [ ]

19. Do you have savings with an Islamic MFI?
a. YES [ ] b. NO [ ]

20. What is the distance of the nearest Islamic MFI in your area?
a. 1 - 5 kilometres [ ]
b. 6 - 10 kilometres [ ]
c. 11 - 15 kilometres [ ]
d. 16 - 20 kilometres [ ]
e. Over 20 kilometres [ ]

21. Was there any charge(s) on your financing?
    a. YES [ ] b. NO [ ]

22. If YES, what were these charge(s)? (You can tick more than one)
    a. Administrative or service fee [ ]
    b. Insurance fee [ ]
    c. Guarantee fee [ ]
    d. Legal fee [ ]
    e. Other(s), please specify _____

23. Did you have to make any informal payment (such as gifts or money for financing officials, etc) to get the financing?
    a. YES [ ] b. NO [ ]

Section 3. Non-Clients of Islamic MFIs

1. Do you have any intention to borrow in the future?
    a. YES [ ] b. NO [ ]
    *(If NO, please proceed to **section 4**)*

2. If YES, where do you intend to borrow from?
    a. Formal financial institution [ ]
    b. Informal financial institution [ ]
    c. Both sources [ ]

3. Would you borrow from an Islamic MFI if available in your area?
    a. YES [ ] b. NO [ ]

4. If NO, what are your reasons for not borrowing from an Islamic MFI? (You can tick more than one reason)
    a. Insufficient income/assets [ ]
    b. Incurred previous financing(s) or bad financing record [ ]
    c. Have no collateral [ ]
    d. Have difficulty in completing the required documents [ ]
    e. Islamic MFIs financing application process takes too much time [ ]
    f. I could access informal institutions much more easily [ ]
    g. Islamic MFIs charge higher costs [ ]
    h. Other(s), please specify _____

Section 4. Welfare Impact of Islamic MFIs' Financing — All Respondents

(This section is for all respondents (clients or non-clients of Islamic MFIs))

1. What kind of production assets do you owned? (You can tick more than one)
    a. Farm land [ ]
    b. Cow/buffalo [ ]
    c. Agricultural tools (reaping hook, plough, sprayer, etc.) [ ]
    d. Tractor, machinery [ ]
    e. Fishing net, boat for fishing [ ]
    f. Other(s), please specify _____

2. Do you own a house?
    a. YES [ ] b. No, I rent it [ ]

3. If YES, what kind of house do you owned?
   a. Brick house [ ]
   b. Wooden house [ ]
   c. Makeshift house [ ]
   d. Other(s), please specify _____

4. What kind of household assets do you own? (You can tick more than one)
   a. Savings [ ]
   b. Motorcycle [ ]
   c. Bicycle [ ]
   d. Telephone [ ]
   e. Household appliances (TV, radio, etc.) [ ]
   f. Furniture [ ]
   g. Other(s), please specify _____

5. Did you receive any assistance from the government in the last 2 years?
   a. YES [ ] b. NO [ ]
   (If NO, please go to Q7).

6. What kind of assistance did you receive? (You can tick more than one)
   a. Cash subsidies [ ]
   b. Inputs of agricultural production (e.g., fertiliser, pesticide, seeds) [ ]
   c. Subsistence support (e.g., grain, vegetables, chicken, goat) [ ]
   d. Interest-subsidised financing for poverty alleviation (not micro financing) [ ]
   e. Subsidized housing [ ]
   f. Other(s), please specify _____

7. What is/are your type of farming activities? (You can tick more than one)
   a. Crop farming [ ]
   b. Livestock raising [ ]
   c. Processing produce (poultry, fish, rice, corn, etc.) [ ]
   d. Fishing [ ]
   e. Other(s), please specify _____

8. What is/are your primary source of household income? (You can tick more than one)
   a. Crop farming [ ]
   b. Livestock raising [ ]
   c. Processing produce (poultry, fish, rice, corn, etc.) [ ]
   d. Fishing [ ]
   e. Government worker [ ]
   f. Self-owned enterprise [ ]
   g. Small-scale project [ ]
   h. Migrant worker's wages [ ]
   i. Other(s), please specify _____

9. Does your household have any subsidiary income?
   a. YES [ ] b. NO [ ]

10. If YES, what is the source(s) of your household subsidiary income?
    (You can tick more than one)
   a. Rental of house/land [ ]
   b. Teaching [ ]
   c. Street selling (e.g., newspapers, fruits, cold drinks, etc.) [ ]
   d. Handicrafts [ ]

e. Collecting recycles materials (e.g., bottles, boxes, etc.) [ ]
f. Poultry/fish processing [ ]
g. Rice/corn milling [ ]
h. Relief payment from government [ ]
i. Remittance from other family member [ ]
j. Other(s), please specify _____

11. Have you experienced a major loss over the past two years?
a. YES [ ] b. NO [ ]

12. If YES, what kinds of loss (es) have you experienced?
(You can tick more than one)
a. Bankruptcy [ ]
b. Natural disaster [ ]
c. Crop failure [ ]
d. Other(s), please specify _____

Section 5. Islamic Values and Schemes of Islamic MFIs for Rural Households

Below there is a series of statements pertaining to your attitude toward Islamic financing. Please CIRCLE how strongly you agree or disagree with each of the following statements on a scale of 1 to 7. **1- strongly disagree (SD), 7- strongly agree (SA).**
(This section is only for Islamic MFIs clients.)

	SD			**Neutral**			**SA**
1. My spiritual beliefs affect every aspect of my life including my financial activities	1	2	3	4	5	6	7
2. My spiritual beliefs play an important role before I decided to borrow	1	2	3	4	5	6	7
3. I always consider my spiritual beliefs before I make any decision on my financial activities	1	2	3	4	5	6	7
4. I always follow the guidance of the scholars of my spiritual beliefs in my financial activities	1	2	3	4	5	6	7
5. I always use financial products that parallel my spiritual beliefs even if they are more expensive or more sophisticated	1	2	3	4	5	6	7
6. Most of Islamic MFIs' schemes in Indonesia fulfil the Indonesia *shari'ah* supervisory board standards	1	2	3	4	5	6	7
7. I believe the Indonesian *shari'ah* supervisory board always monitors Islamic MFIs' products and services	1	2	3	4	5	6	7
8. Islamic MFIs always clearly describe their products and services to their clients	1	2	3	4	5	6	7
9. If there is any dispute, I believe Islamic MFIs will take reasonable attempts that parallel Islamic values to resolve the problems	1	2	3	4	5	6	7
10. I believe the aim of Islamic MFIs is not only profit oriented but also to help people and spread Islamic values	1	2	3	4	5	6	7

Islamic MFIs' Schemes

1. What is the type of your Islamic MFI financing?
   a. Profit and Loss Sharing (PLS) [ ]
   b. Non-Profit and Loss Sharing (Non-PLS) [ ]

2. What is your financing scheme? (You can tick more than one)
   a. *Murabahah* [ ]
   b. *Salam* [ ]
   c. *Ijarah Wa Iqtina'* [ ]
   d. *Qard* [ ]
   e. *Mudharabah* [ ]
   f. *Musyarakah* [ ]
   g. *Muzara'ah* [ ]
   h. *Muzaqat* [ ]

3. *Shari'ah* compliance

Below is a series of statements about *shari'ah* compliance standards from Indonesia's *shari'ah* board (DSN). Based on your experience, please CIRCLE how strongly you agree or disagree with each of the following statements on a scale of 1 to 7. **1- strongly disagree (SD), 7-strongly agree (SA).** *(Please answer only the section that is approriate to your financing schemes)*

	SD			**Neutral**			**SA**
Non-PLS ***Murabahah* (cost plus mark up)**							
1. Ownership of the goods or assets belongs to the Islamic MFI before the transaction (before goods are sold to the clients)	1	2	3	4	5	6	7
2. Islamic MFIs always disclose the cost of goods and their margin before proceeding to a sale and purchase agreement	1	2	3	4	5	6	7
***Bai' Salam* (forward contract)**							
1. Before the transaction, Islamic MFIs and clients always discuss and agree on the quality, quantity, and delivery time of the goods	1	2	3	4	5	6	7
2. Payment from Islamic MFIs is made at the time the contract was agreed, delivery of the goods from clients is later	1	2	3	4	5	6	7
***Ijarah Wa Iqtina'* (lease and sale)**							
1. Clients of Islamic MFIs have to take an Ijarah (leasing) contract first before proceeding to an Ijarah wa iqtina' contract	1	2	3	4	5	6	7
2. There is no requirement from Islamic MFIs to buy the goods at the end of the Ijarah (leasing) period	1	2	3	4	5	6	7
***Qard* (benevolent loan/financing)**							
1. Islamic MFIs do not ask for any benefit from the loan/financing	1	2	3	4	5	6	7
2. Islamic MFIs always consider rescheduling or writing off of the loan/financing if clients have difficulty in repaying the loan/financing	1	2	3	4	5	6	7
PLS ***Mudharabah* (trustee financing)**							

1. Islamic MFIs contribute 100% of the capital and clients contribute the effort	1	2	3	4	5	6	7
2. Losses are borne by the Islamic MFI as long as there is no fraud or negligence by the client	1	2	3	4	5	6	7
***Musharakah* (equity participation)**							
1. A guarantee is not compulsory in this scheme	1	2	3	4	5	6	7
2. Any loss is borne by both parties (Islamic MFI and client) based on the capital contributon	1	2	3	4	5	6	7
***Muzaqat* (orchard financing)**							
1. The Islamic MFI and client contribute equity in the orchard sector	1	2	3	4	5	6	7
2. The harvest is shared based on the equity participation	1	2	3	4	5	6	7
***Muzara'ah* (share of harvest)**							
1. The Islamic MFI provides the land or funds to use in an agricultural business	1	2	3	4	5	6	7
2. Any benefits are shared based on the agreement	1	2	3	4	5	6	7

Section 6. PLS and Non-PLS Mechanism

Clients with PLS (Financing Behaviour)

1. What is your PLS financing scheme? (You can tick more than one)
   a. *Mudharabah* [ ]
   b. *Musyarakah* [ ]
   c. *Muzara'ah* [ ]
   d. *Muzaqat* [ ]

2. How many times have you borrowed PLS financing from an Islamic MFI in the last 2 years?
   a. Once [ ]
   b. Twice [ ]
   c. 3 times [ ]
   d. More than 3 times [ ]

3. What was the total amount of PLS financing you applied for from an Islamic MFI?
   a. Less than Rp. 1,000,000 [ ]
   b. Between Rp. 1,000,001 and Rp. 3,000,000 [ ]
   c. Between Rp. 3,000,001 and Rp. 5,000,000 [ ]
   d. Between Rp. 5,000,001 and Rp. 7,000,000 [ ]
   e. Between Rp. 7,000,001 and Rp. 15,000,000 [ ]
   f. More than Rp. 15,000,000 [ ]

4. What was the total amount of PLS financing approved by the Islamic MFI in your application?
   a. Less than Rp. 1,000,000 [ ]
   b. Between Rp. 1,000,001 and Rp. 3,000,000 [ ]
   c. Between Rp. 3,000,001 and Rp. 5,000,000 [ ]
   d. Between Rp. 5,000,001 and Rp. 7,000,000 [ ]
   e. Between Rp. 7,000,001 and Rp. 15,000,000 [ ]
   f. More than Rp. 15,000,000

5. Was the amount of PLS financing approved adequate?
   a. YES [ ] b. NO [ ]

6. What was the purpose of your PLS financing? (You can tick more than one)

Agricultural activities

   a. Farm cropping [ ]
   b. Livestock raising [ ]
   c. Produce processing [ ]
   d. Purchase of farming machinery [ ]
   e. Other(s), please specify _____

Non-agricultural activities

   a. To start a self-run enterprise [ ]
   b. To finance an existing enterprise [ ]
   c. To finance a small-scale project [ ]
   d. Basic household needs [ ]
   e. To pay for children's education [ ]
   f. Emergency (e.g., hospitalisation) [ ]
   g. Housing (e.g., repair, construction) [ ]
   h. Paying off other debts [ ]
   i. Other(s), please specify_____

7. What was the duration of your PLS financing?
   a. 3 to 6 months [ ]
   b. 7 to 12 months [ ]
   c. 1 to 2 years [ ]
   d. 2 to 3 years [ ]
   e. More than 3 years [ ]

8. What was the mode of your PLS financing payment?
   a. Weekly [ ]
   b. Monthly [ ]
   c. Semi-annually [ ]
   d. Annually [ ]
   e. Other(s) please specify _____

9. Did your PLS financing require collateral?
   a. YES [ ] b. NO [ ]
   (*If NO, please go to Q11)*

10. If YES, what kind of collateral was required? (You can tick more than one)
   a. Mortgage property [ ]
   b. Chattel mortgage (i.e., vehicles, farm equipment) [ ]
   c. Promissory note [ ]
   d. Co-signor/co-guarantor [ ]
   e. Deposits [ ]
   f. Other(s), please specify _____

11. What is the current status of your PLS financing?
   a. Fully paid [ ]
   b. Current [ ]
   c. Past due [ ]
   d. Restructured [ ]

12. How long did the Islamic MFI take to process your PLS financing application?
    a. Less than a week [ ]
    b. 1 week [ ]
    c. 2 weeks [ ]
    d. 3 weeks [ ]
    e. 1 month [ ]
    f. More than a month [ ]

13. Was there any charge(s) on your PLS financing?
    a. YES [ ] b. NO [ ]
    (*If NO, please go to Q15)*

14. If YES, what were these charge(s)? (You can tick more than one)
    a. Administrative or service fee [ ]
    b. Insurance fee [ ]
    c. Guarantee fee [ ]
    d. Legal fee [ ]
    e. Other(s), please specify _____

15. Did you have to make any informal payment (such as gifts or money for financing officials, etc) to get the PLS financing?
    a. YES [ ] b. NO [ ]

Clients with Non-PLS (Financing Behaviour)

1. What is your non-PLS financing scheme? (You can tick more than one)
    a. *Murabahah* [ ]
    b. *Salam* [ ]
    c. *Ijarah Wa Iqtina'* [ ]
    d. *Qard* [ ]

2. How many times have you borrowed non-PLS financing from Islamic MFI in the last 2 years?
    a. Once [ ]
    b. Twice [ ]
    c. 3 times [ ]
    d. More than 3 times [ ]

3. What was the total amount of non-PLS financing you applied from Islamic MFI?
    a. Less than Rp. 1,000,000 [ ]
    b. Between Rp. 1,000,001 and Rp. 3,000,000 [ ]
    c. Between Rp. 3,000,001 and Rp. 5,000,000 [ ]
    d. Between Rp. 5,000,001 and Rp. 7,000,000 [ ]
    e. Between Rp. 7,000,001 and Rp. 15,000,000 [ ]
    f. More than Rp. 15,000,000 [ ]

4. What was the total amount of non-PLS financing approved by the Islamic MFI in your application?
    a. Less than Rp. 1,000,000 [ ]
    b. Between Rp. 1,000,001 and Rp. 3,000,000 [ ]
    c. Between Rp. 3,000,001 and Rp. 5,000,000 [ ]
    d. Between Rp. 5,000,001 and Rp. 7,000,000 [ ]
    e. Between Rp. 7,000,001 and Rp. 15,000,000 [ ]
    f. More than Rp. 15,000,000 [ ]

5. Was the amount of non-PLS financing approved adequate?
   a. YES [ ] b. NO [ ]

6. What was the purpose of your non-PLS financing? (You can tick more than one)

Agricultural activities

   a. Farm cropping [ ]
   b. Livestock raising [ ]
   c. Produce processing [ ]
   d. Purchase of farming machinery [ ]
   e. Other(s), please specify _____

Non-agricultural activities

   a. To start a self-run enterprise [ ]
   b. To finance an existing enterprise [ ]
   c. To finance a small-scale project [ ]
   d. Basic household needs [ ]
   e. To pay for children's education [ ]
   f. Emergency (e.g., hospitalisation) [ ]
   g. Housing (e.g., repair, construction) [ ]
   h. Paying off other debts [ ]
   i. Other(s), please specify_____

7. What was the duration of your non-PLS financing?
   a. 3 to 6 months [ ]
   b. 7 to 12 months [ ]
   c. 1 to 2 years [ ]
   d. 2 to 3 years [ ]
   e. More than 3 years [ ]

8. What was the mode of your non-PLS financing payment?
   a. Weekly [ ]
   b. Monthly [ ]
   c. Semi-annually [ ]
   d. Annually [ ]
   e. Other(s), please specify _____

9. Did your non-PLS financing require collateral?
   a. YES [ ] b. NO [ ]
   (*If NO, please go to Q11)*

10. If YES, what kind of collateral was required? (You can tick more than one)
   a. Mortgage property [ ]
   b. Chattel mortgage (i.e., vehicles, farm equipment) [ ]
   c. Promissory note [ ]
   d. Co-signor/co-guarantor [ ]
   e. Deposits [ ]
   f. Other(s), please specify _____

11. What is the current status of your non-PLS financing?
   a. Fully paid [ ]
   b. Current [ ]
   c. Past due [ ]
   d. Restructured [ ]

12. How long did the Islamic MFI take to process your non-PLS financing application?
    a. Less than a week [ ]
    b. 1 week [ ]
    c. 2 weeks [ ]
    d. 3 weeks [ ]
    e. 1 month [ ]
    f. More than a month [ ]

13. Was there any charge(s) on your non-PLS financing?
    a. YES [ ] b. NO [ ]
    (*If NO, please go to Q15)*

14. If YES, what were these charge(s)? (You can tick more than one)
    a. Administrative or service fee [ ]
    b. Insurance fee [ ]
    c. Guarantee fee [ ]
    d. Legal fee [ ]
    e. Other(s), please specify _____

15. Did you have to make any informal payment (such as gifts or money for financing officials, etc) to get the non-PLS financing?
    a. YES [ ] b. NO [ ]

Section 7. Assistance and Support for Rural Households

(This section is only for Clients who have received financing from Islamic MFIs)

1. Did you receive any assistance/support from the government after you obtained your financing?
    a. YES [ ] b. NO [ ]
    *(If NO, please go to **Section 8**)*

2. If YES, what kind of assistance/support did you receive? (You can tick more than one)
    a. Financial support [ ]
    b. Skill/technical support [ ]
    c. Religious support [ ]
    d. Other(s), please specify _____

3. How many times did you get assistance/support from the government during your financing period?
    a. Once [ ]
    b. Twice [ ]
    c. Three times [ ]
    d. More than three times [ ]

4. Did you find the assistance/support beneficial?
    a. YES [ ] b. NO [ ]

5. If YES, what was the benefit(s)? (You can tick more than one)
    a. I improved my financial skills [ ]
    b. I improved my business knowledge [ ]
    c. I improved my spiritual/moral knowledge [ ]
    d. There is a chance to get a future grant [ ]
    e. I got a bigger network (more friends) [ ]

f. Other(s), please specify _____

Section 8. Demographic and Socio-economic Characteristics of Respondents (for All Respondents)

1. What is your gender?
   a. Male [ ] b. Female [ ]

2. Which age group do you belong to?
   a. 18 – 25 years [ ]
   b. 26 – 35 years [ ]
   c. 36 – 45 years [ ]
   d. 46 – 55 years [ ]
   e. 56 – 65 years [ ]
   f. Over 66 years [ ]

3. What is your marital status?
   a. Single/Never Married [ ]
   b. Married [ ]
   c. De facto relationship [ ]
   d. Divorced/Separated [ ]

4. Which religious group do you belong to?
   a. Islam [ ]
   b. Protestant [ ]
   c. Roman catholic [ ]
   d. Hindu [ ]
   e. Buddhist [ ]
   f. Other(s), please specify _____

5. How many children do you have?
   a. None [ ]
   b. 1 [ ]
   c. 2 [ ]
   d. 3 [ ]
   e. 4 [ ]
   f. More than 4 [ ]

6. How many male children do you have?
   a. None [ ]
   b. 1 [ ]
   c. 2 [ ]
   d. 3 [ ]
   e. 4 [ ]
   f. More than 4 [ ]

7. What is your highest educational or professional qualification?
   a. No education [ ]
   b. Primary school [ ]
   c. Middle school [ ]
   d. High school [ ]
   e. Three-year college [ ]
   f. Bachelor degree [ ]

g. Postgraduate (Postgraduate Diploma, Masters or PhD degree) [ ]
h. Other(s), please specify _____

8. What is your occupation?
   a. Crop farming [ ]
   b. Livestock raising [ ]
   c. Fishery [ ]
   d. Produce processing [ ]
   e. Daily wage labour [ ]
   f. Small entrepreneur [ ]
   g. Government workers [ ]
   h. Retired [ ]
   i. Unemployed [ ]
   j. Other (please specify) _____

9. How long have you been working (the total working period in the past plus current job)?
   a. Less than 1 year [ ]
   b. 1 to 5 years [ ]
   c. 5 to 10 years [ ]
   d. 10 years and above [ ]

10. Which of the following best describes the structure of your household?
   a. Single adult living alone [ ]
   b. Couple, with child (or children) [ ]
   c. Couple, without child [ ]
   d. Single parent, with child (or children) [ ]
   e. Immediate and extended family members [ ]
   f. Other(s), please specify _____

11. The number of people living in your household is (please state):
   _____ persons

12. The number of income earners in your household is (please state):
   _____ persons

13. What is your annual household income?
   a. Less than Rp. 12,000,000 [ ]
   b. Between Rp. 12,000,001 and Rp. 15,000,000 [ ]
   c. Between Rp. 15,000,001 and Rp. 20,000,000 [ ]
   d. Between Rp. 20,000,001 and Rp. 25,000,000 [ ]
   e. Between Rp. 25,000,001 and Rp. 30,000,000 [ ]
   f. More than Rp. 30,000,000 [ ]

14. What is the average total annual expenditure (on food and non-food) of your household?
   a. Less than Rp. 12,000,000 [ ]
   b. Between Rp. 12,000,001 and Rp. 15,000,000 [ ]
   c. Between Rp. 15,000,001 and Rp. 20,000,000 [ ]
   d. Between Rp. 20,000,001 and Rp. 25,000,000 [ ]
   e. Between Rp. 25,000,001 and Rp. 30,000,000 [ ]
   f. More than Rp. 30,000,000 [ ]

15. Is any person in your household working as a government official (e.g., on the village committee)?
   a. YES [ ] b. NO [ ]

16. Who makes the important family decisions in your household?
    a. Husband [ ] b. Wife [ ] c. Both [ ]

17. What percentage of your total annual expenditure is on food?
    a. 20%-30% [ ]
    b. 30%-40% [ ]
    c. 40%-50% [ ]
    d. 50%-60% [ ]
    e. 60%-70% [ ]
    f. Over 70% [ ]

18. What is the average annual health care expenditure of your household?
    a. Less than Rp. 1,000,000 [ ]
    b. Between Rp. 1,000,001 and Rp. 2,000,000 [ ]
    c. Between Rp. 2,000,001 and Rp. 3,000,000 [ ]
    d. Between Rp. 3,000,001 and Rp. 4,000,000 [ ]
    e. Between Rp. 4,000,001 and Rp. 5,000,000 [ ]
    f. More than Rp. 5,000,000 [ ]

19. What is the size of your household farm land?
    a. Less than 0.1 hectare [ ]
    b. Between 0.1 – 0.5 hectare [ ]
    c. More than 0.5 hectare [ ]
    d. Other(s) please specify _____

Your participation in this survey is greatly appreciated; thank you for your time. If you have further comments about financing cards, please feel free to comment in the space provided below. Once again, we assure you that your identity will remain ***STRICTLY CONFIDENTIAL.***

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